



RECEIVED

APR 08 2003

Technology Center 2600

#1  
4/9/03  
DS

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Rawlins *et al.*

Appl. No. 09/986,764

Filed: November 9, 2001

For: **Method and Apparatus for  
Reducing DC Offsets In A  
Communication System**

Confirmation No. 5623

Art Unit: 2631

Examiner: Vo, Don Nguyen

Atty. Docket: 1744.1330000

**Letter to PTO Draftsman: Submission of Formal Drawings**Commissioner for Patents  
Washington, D.C. 20231

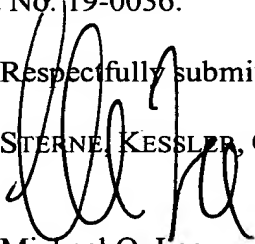
Sir:

Submitted herewith are eighty one sheets of formal drawings with Figures: 1A-1D, 2, 3A-3G, 4, 5, 6A, 6B, 7A, 7B, 8-12, 13A-13I, 14-23, 24A, 24B, 25A, 25B, 26-30, 31A, 31B, 32A, 32A-1, 32A-2, 32A-3, 32A-4, 32B, 32B-1, 32B-2, 32B-3, 33-52, corresponding to the informal drawings submitted with the above-captioned application. Identification of the drawings is provided in accordance with 37 C.F.R. § 1.84(c). Acknowledgment of the receipt, approval, and entry of these formal drawings into this application is respectfully requested.

It is not believed that an extension of time is required, other than any already provided herewith. However, if an extension of time is needed to prevent abandonment of the application, then such extension of time is hereby petitioned. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN &amp; FOX P.L.L.C.

  
Michael Q. Lee  
Attorney for Applicants  
Registration No. 35,239Date: 4/3/031100 New York Avenue, N.W.  
Suite 600  
Washington, D.C. 20005-3934  
(202) 371-2600

SKGF\_DC1:110919.1

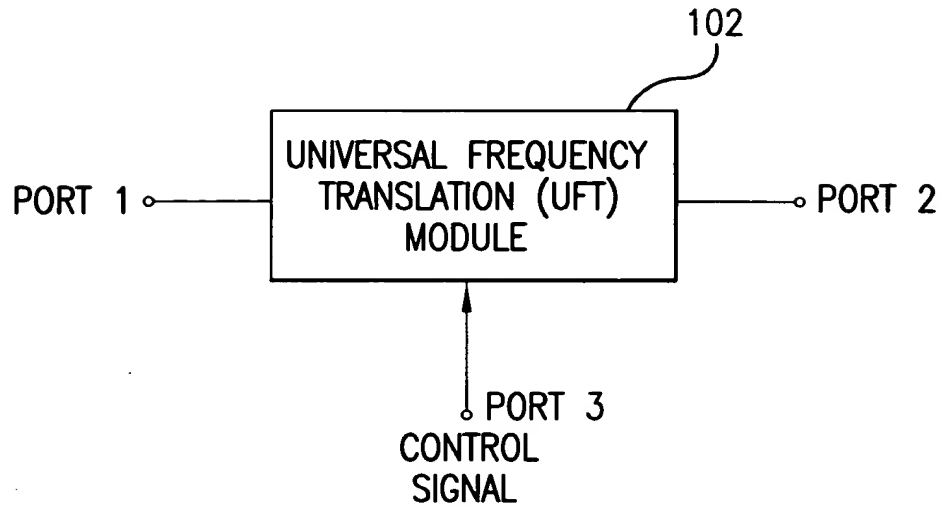


FIG. 1A

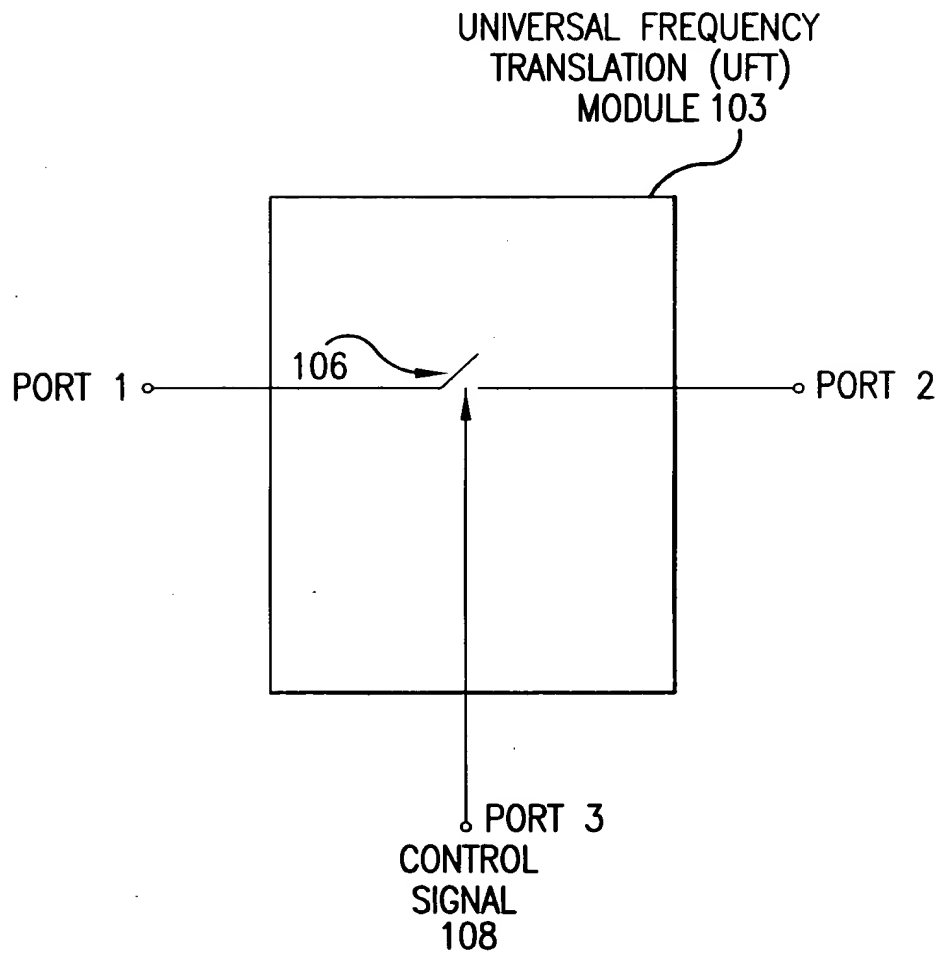


FIG. 1B

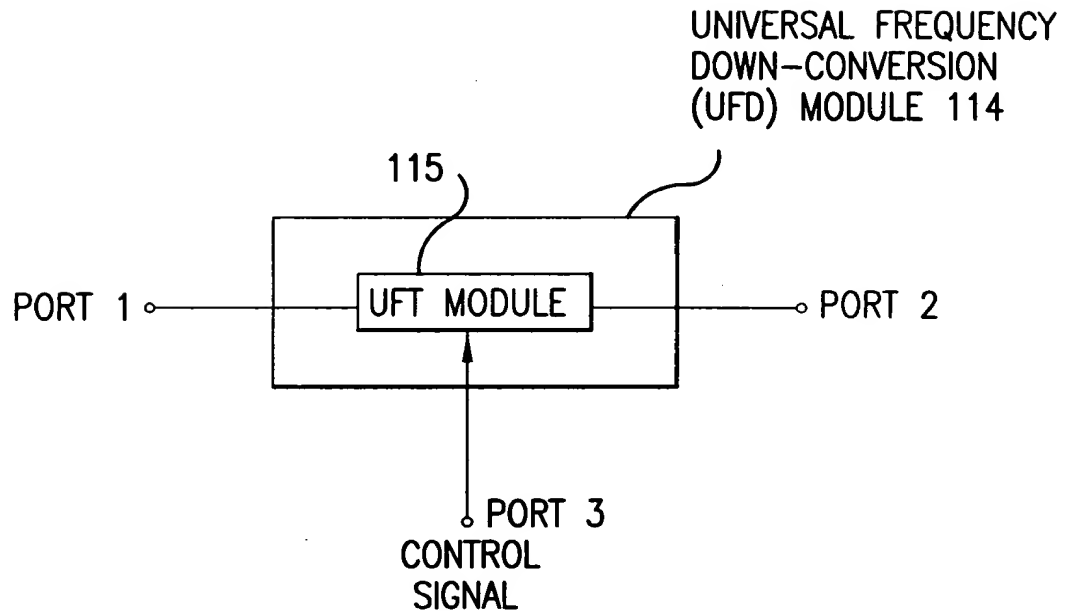


FIG. 1C

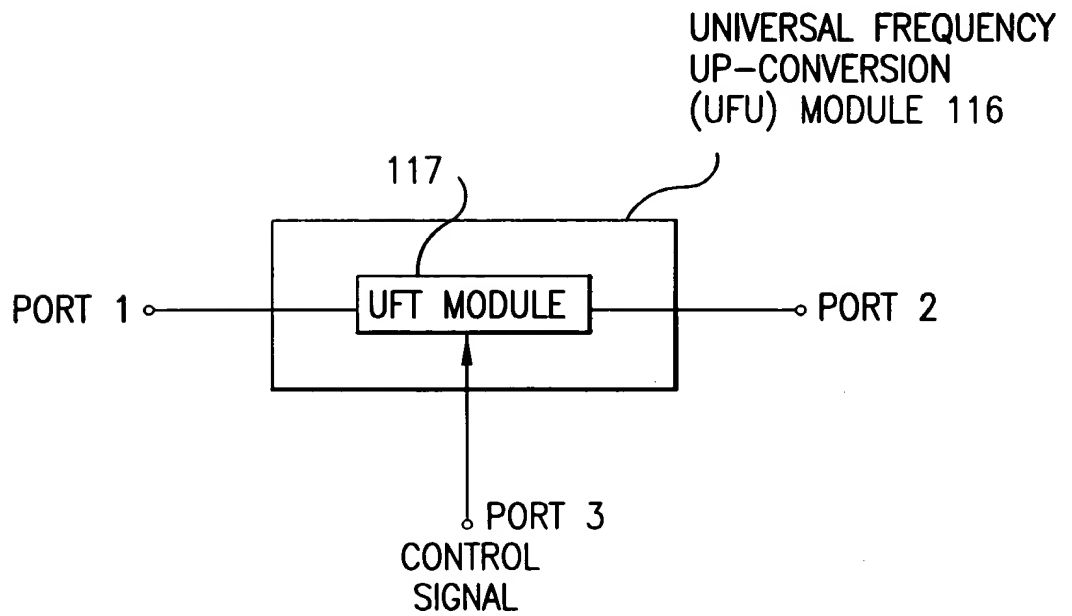


FIG. 1D

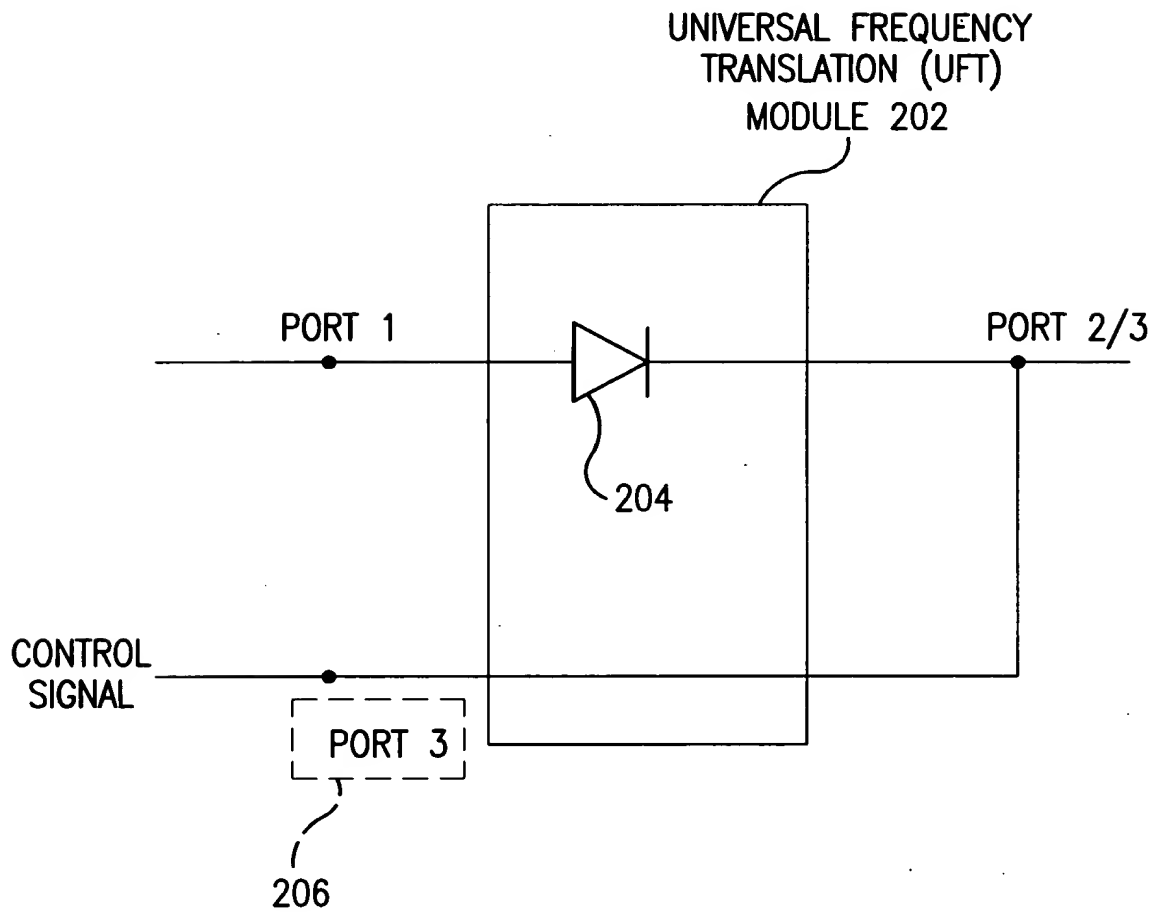


FIG. 2

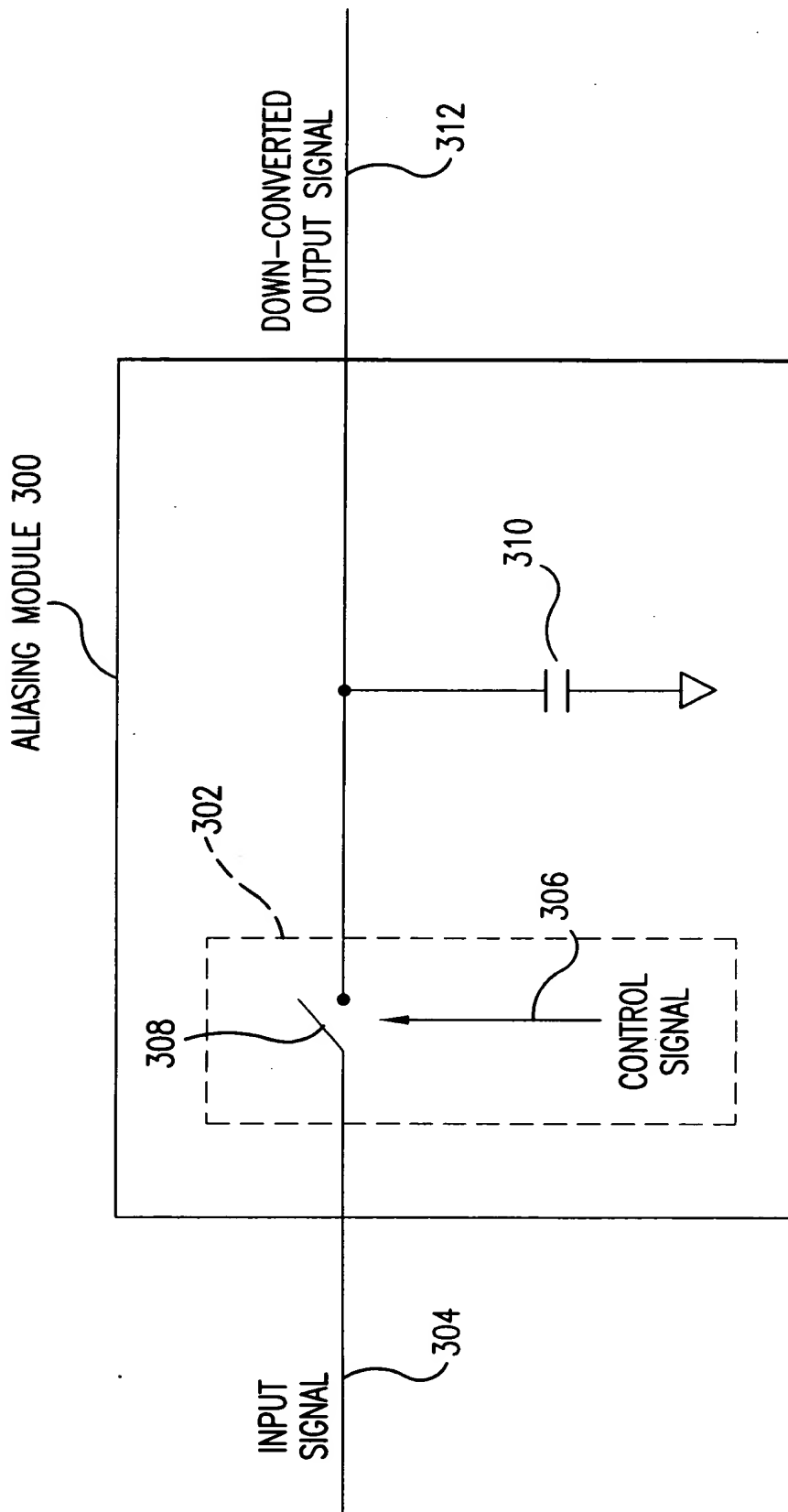


FIG. 3A

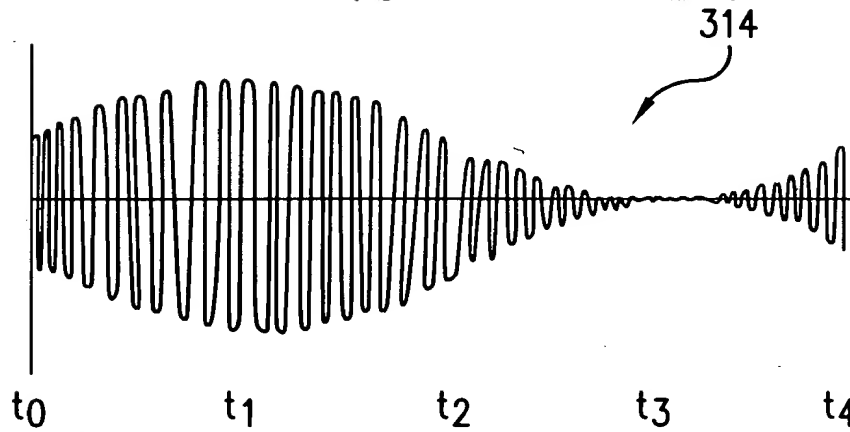


FIG. 3B

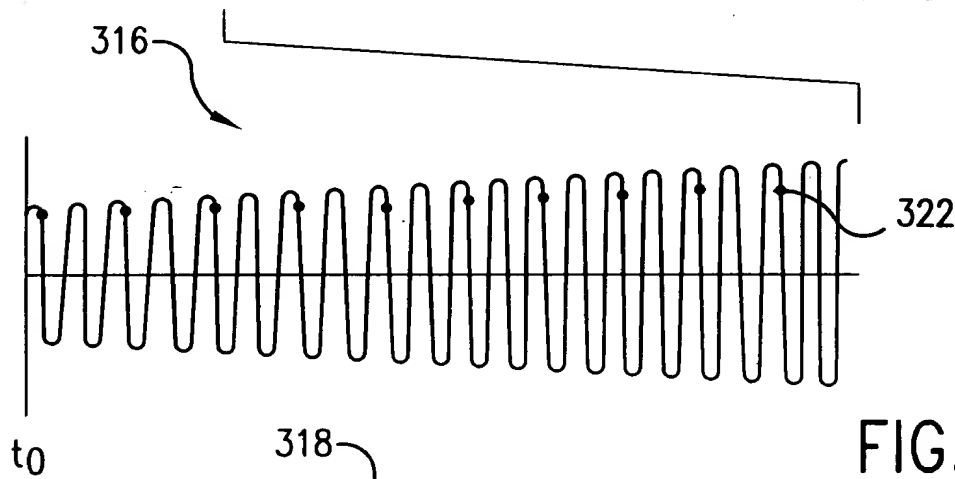


FIG. 3C

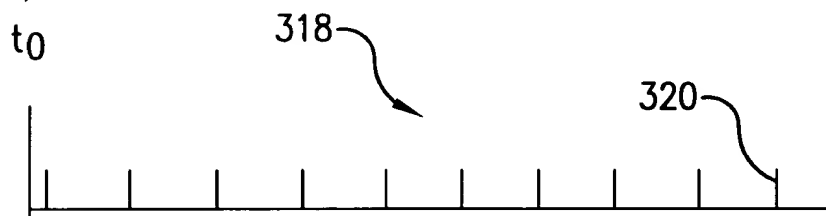


FIG. 3D

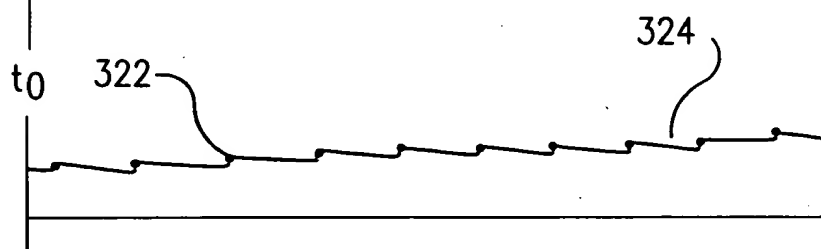


FIG. 3E

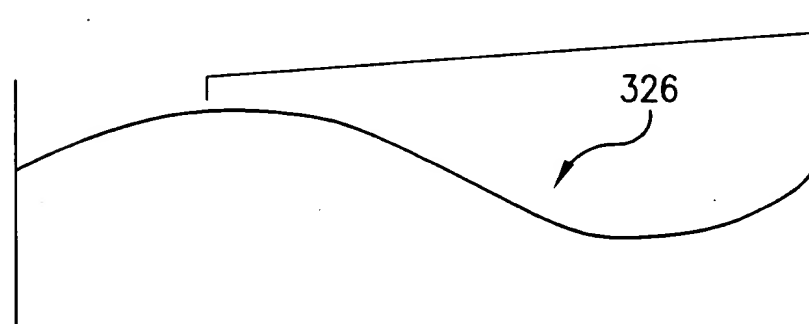


FIG. 3F

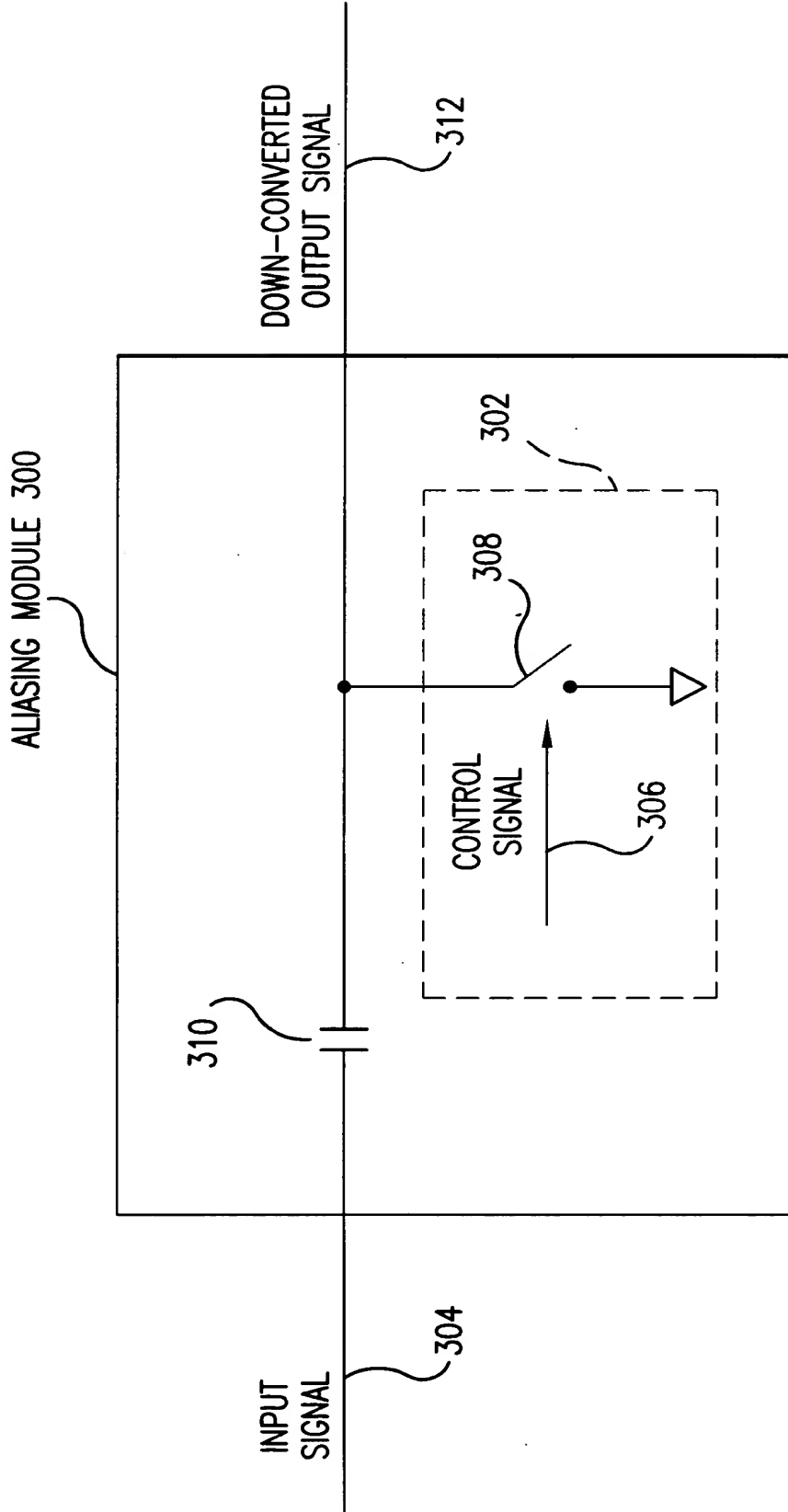


FIG. 3G

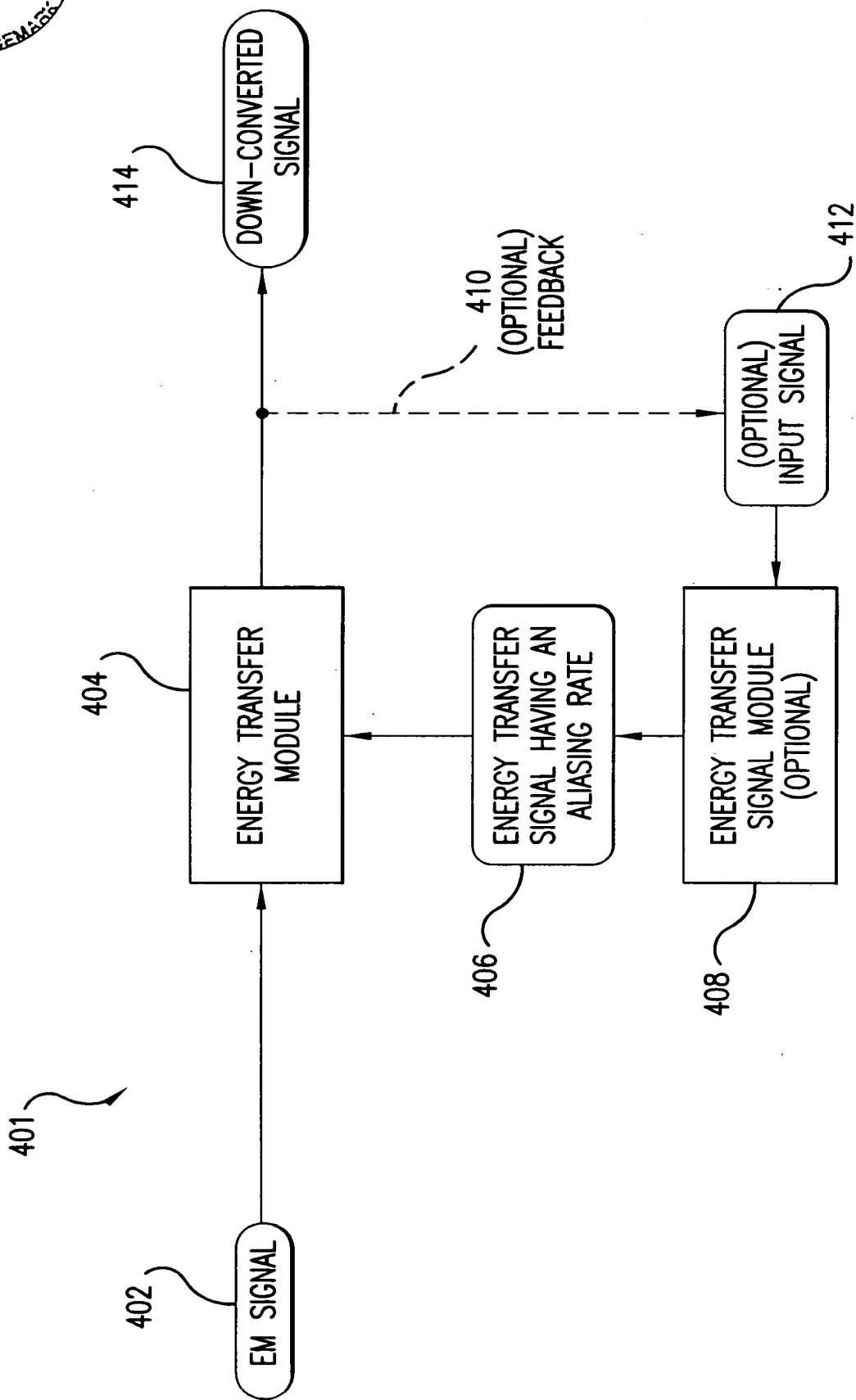


FIG. 4



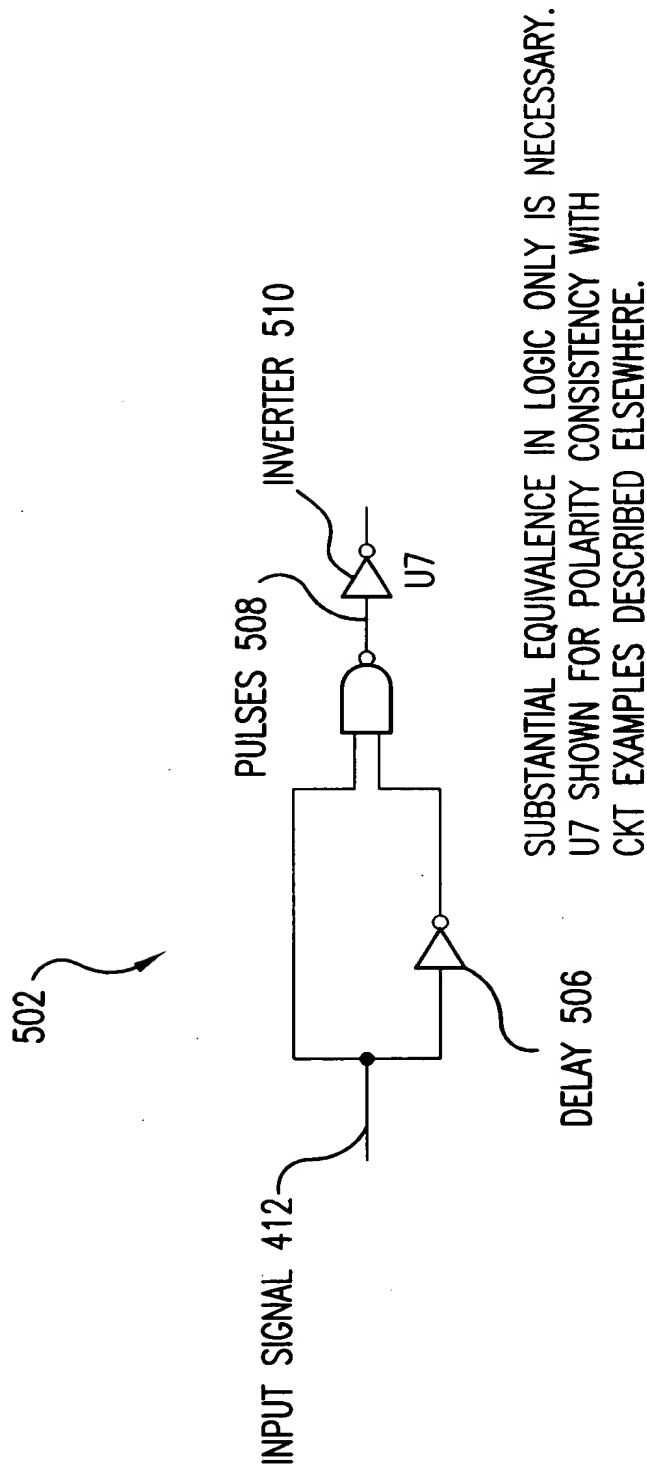


FIG. 5

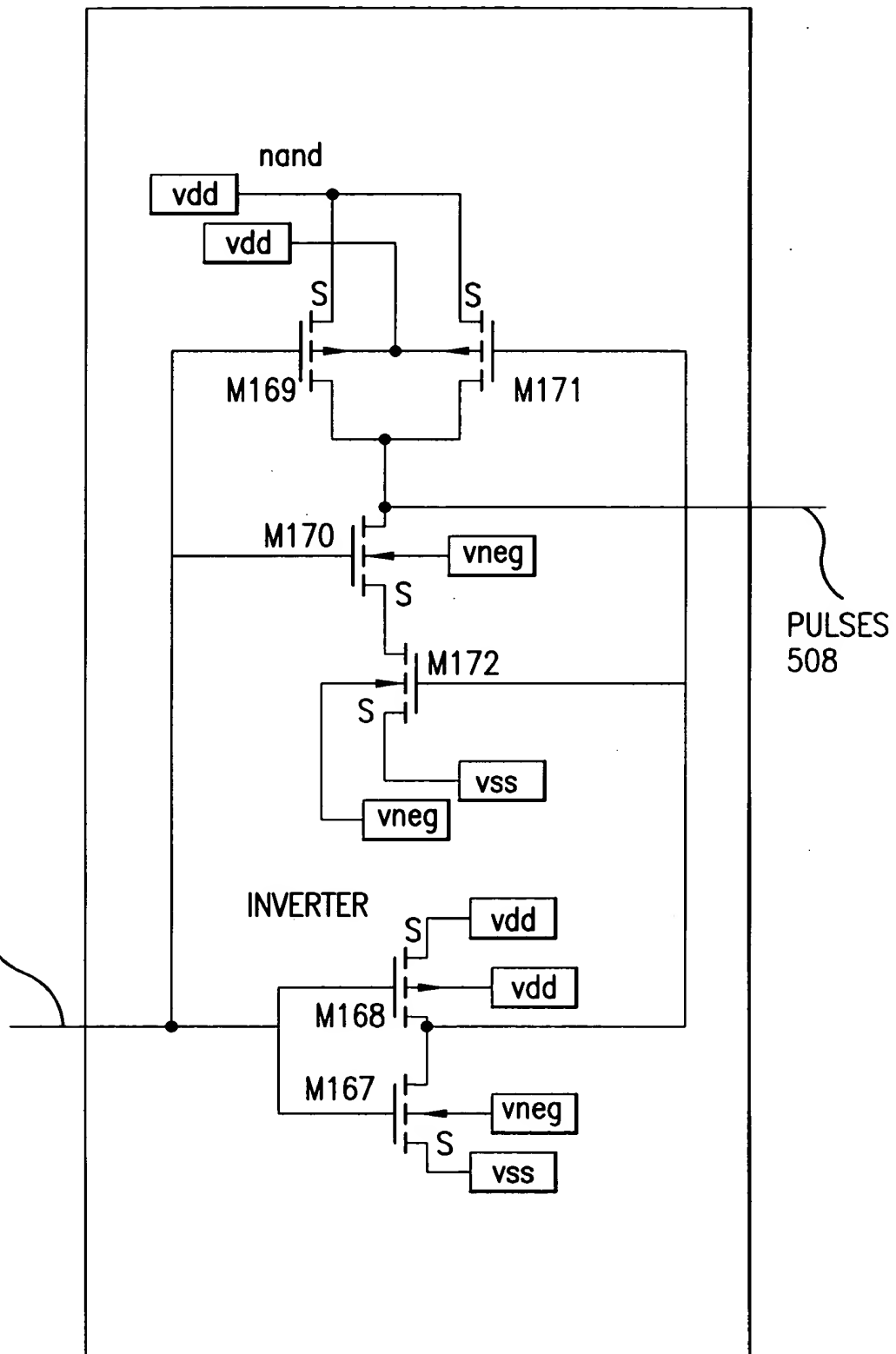


FIG. 6A

Appl. No. 09/986,764; Filed: November 9, 2001  
Dkt. No. 1744.1330000; Group Art Unit: 2631  
Inventors: Rawlins *et al.*; Tel: 202/371-2600  
Title: Method and Apparatus for Reducing DC Offsets  
In a Communication System

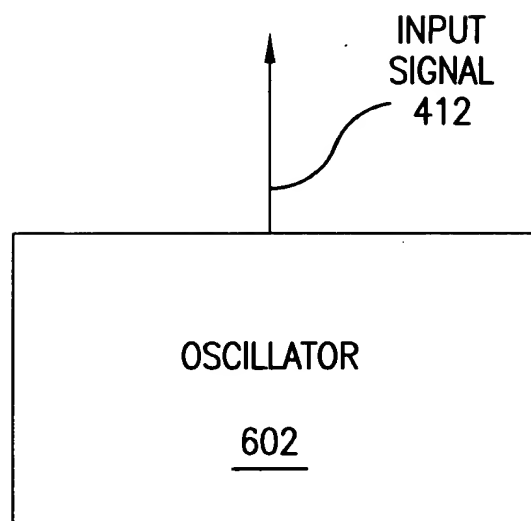


FIG. 6B

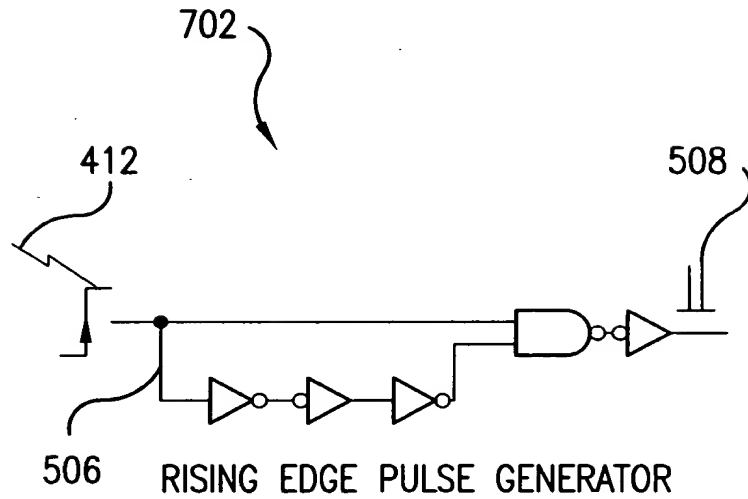


FIG. 7A

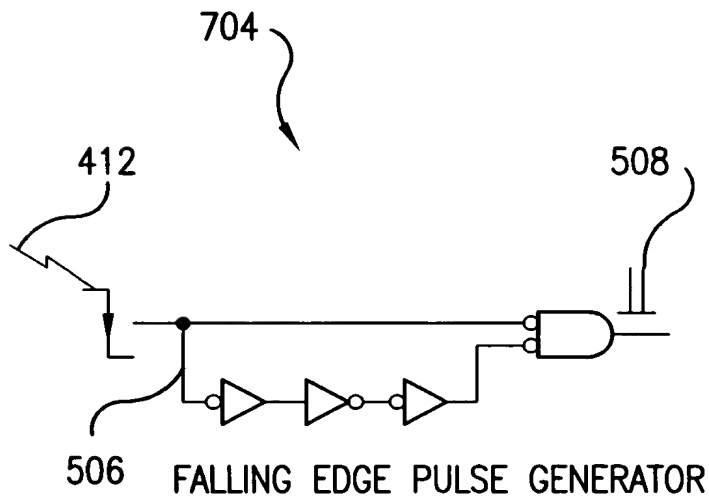
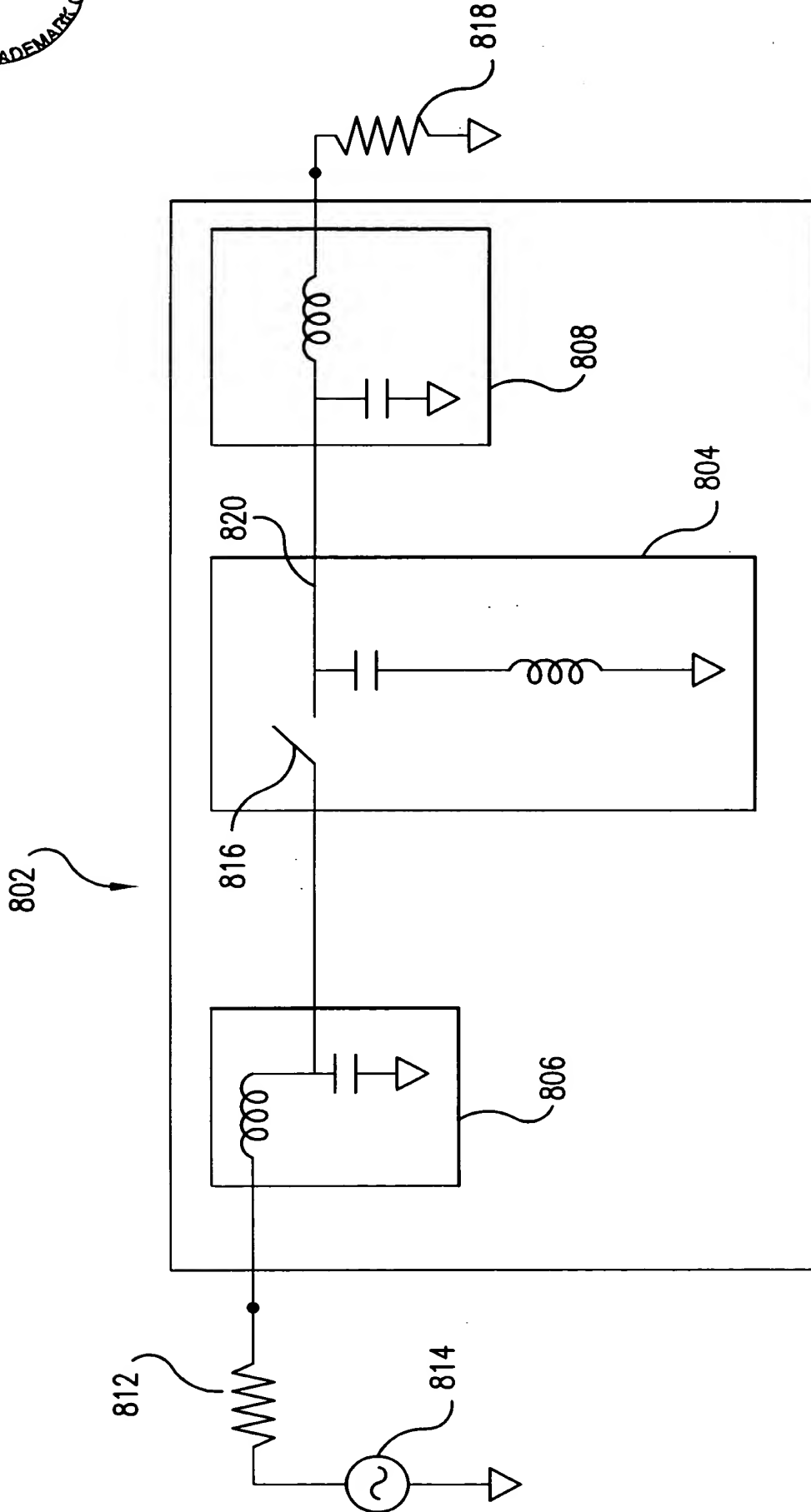
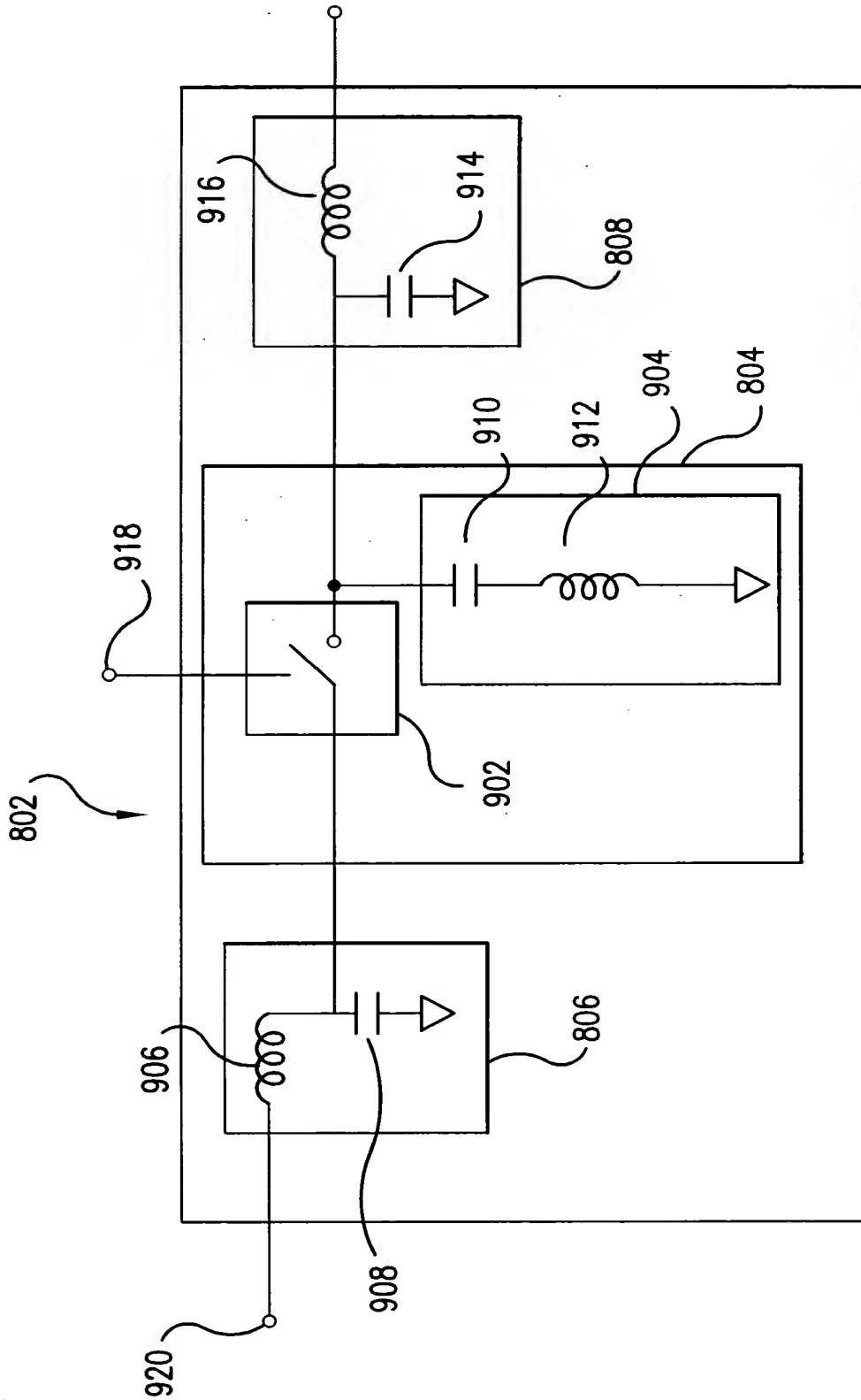


FIG. 7B



IMPEDANCE MATCHED ALIASING MODULE

FIG. 8



ALIASING MODULE

FIG. 9

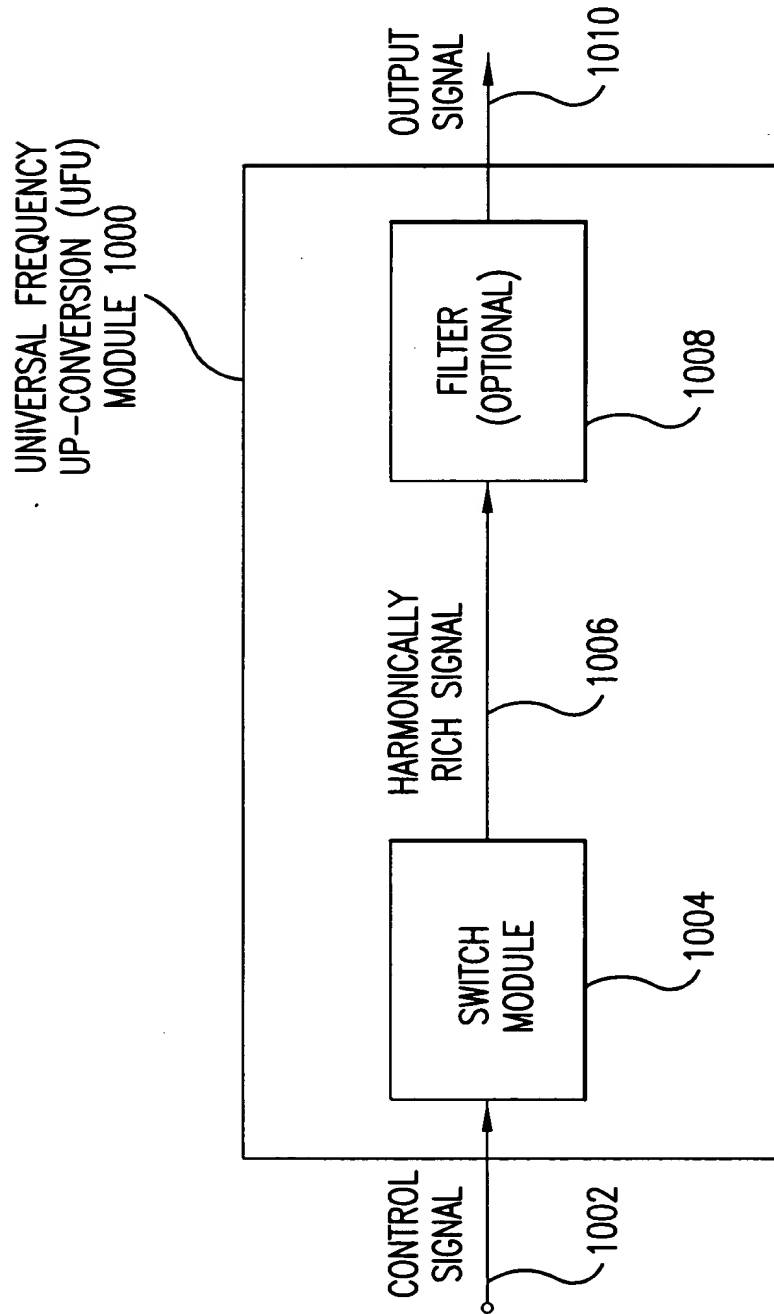
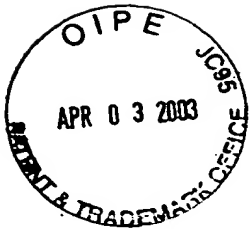


FIG. 10



UNIVERSAL FREQUENCY  
 UP-CONVERSION (UFU)  
 MODULE 1101

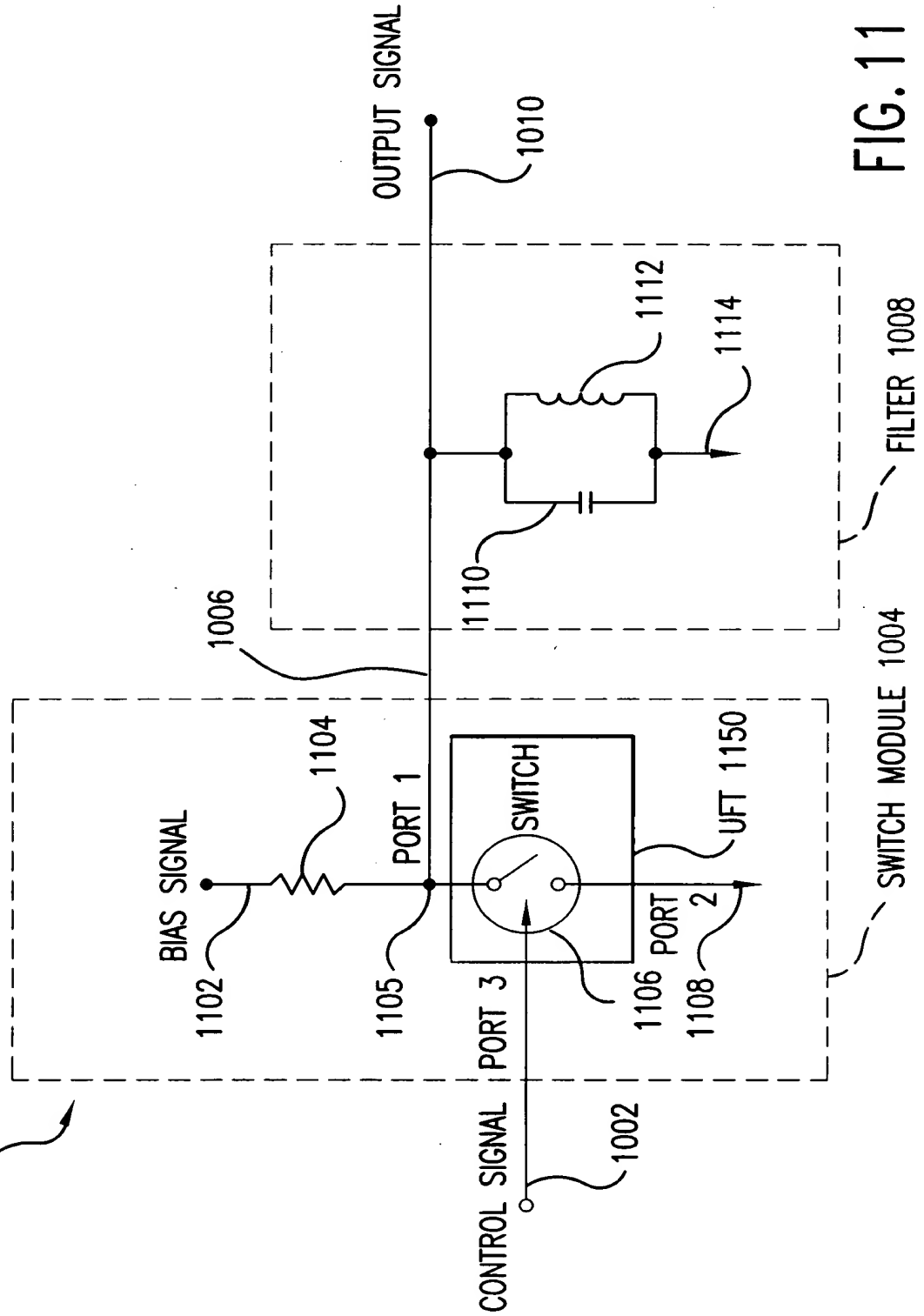


FIG. 11





UNIVERSAL FREQUENCY  
UP-CONVERSION  
(UFU) MODULE 1290

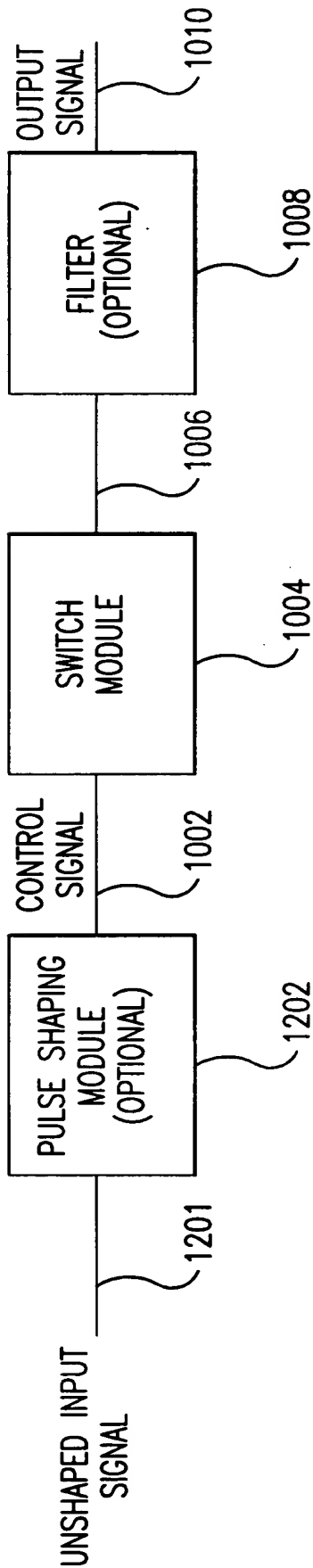
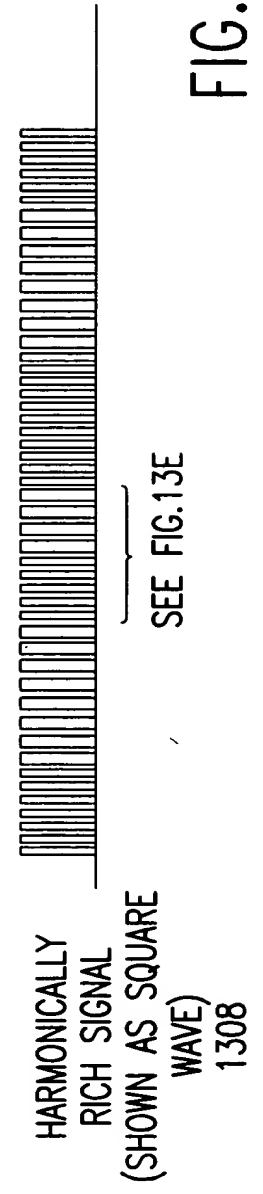
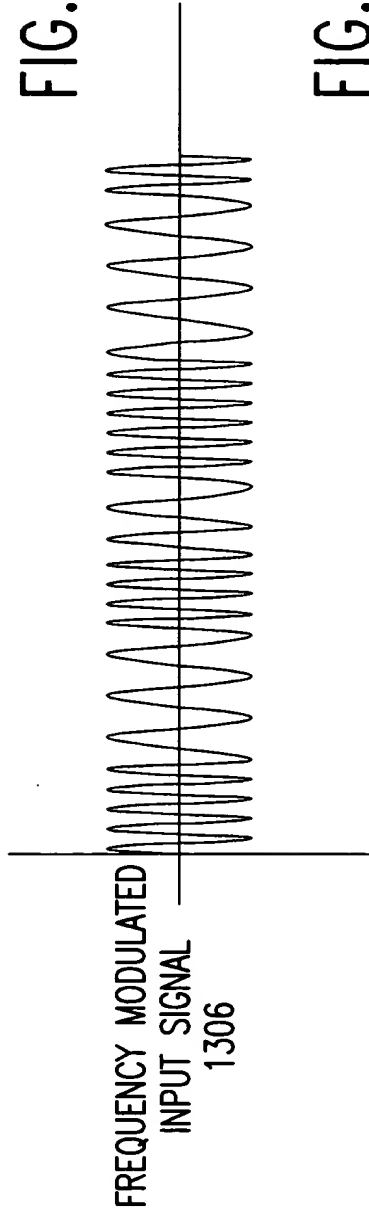
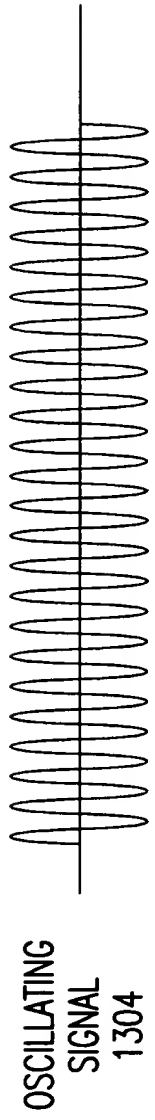
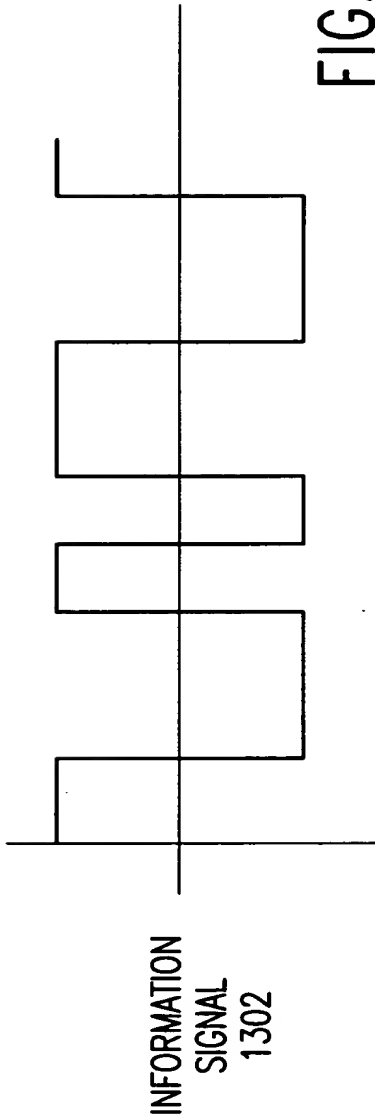
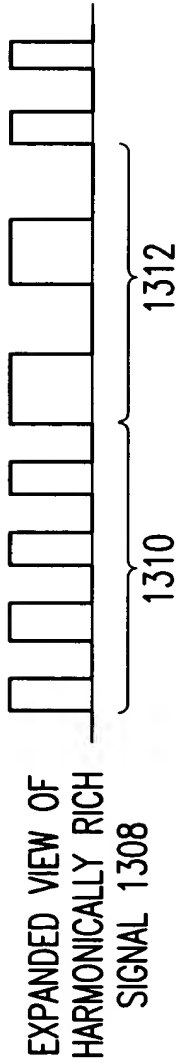


FIG. 12





SEE FIG.13F

FIG.13E

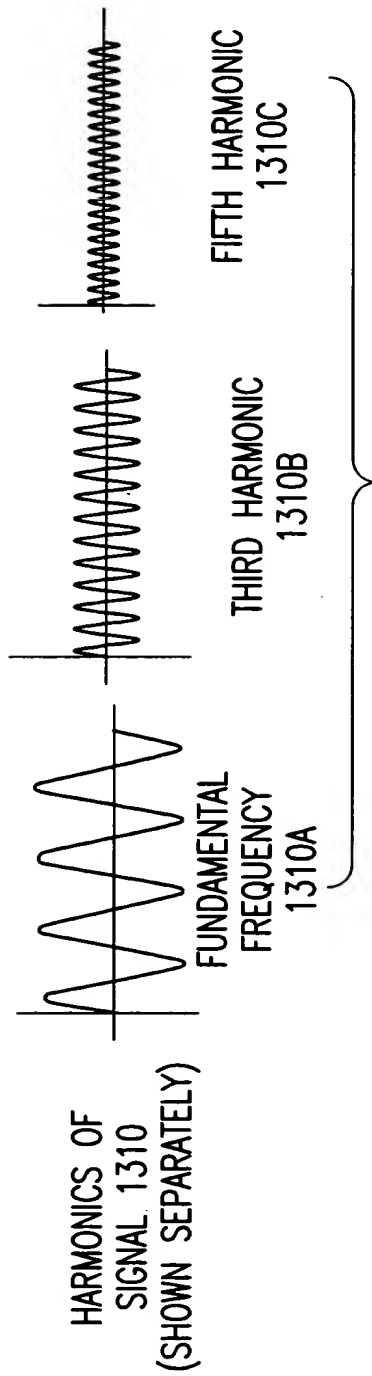


FIG.13F

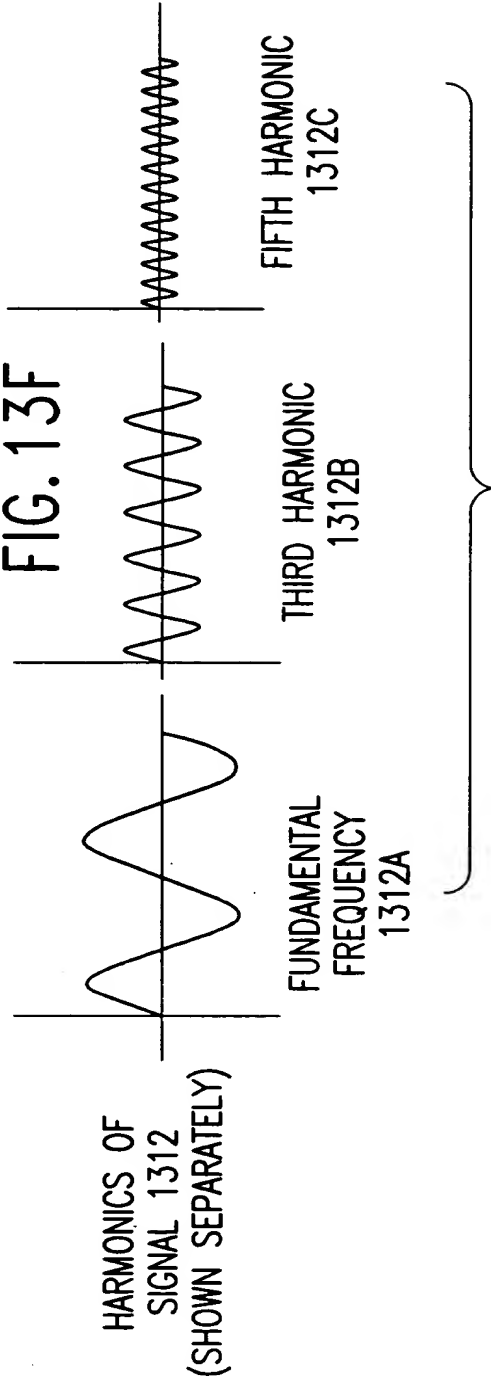
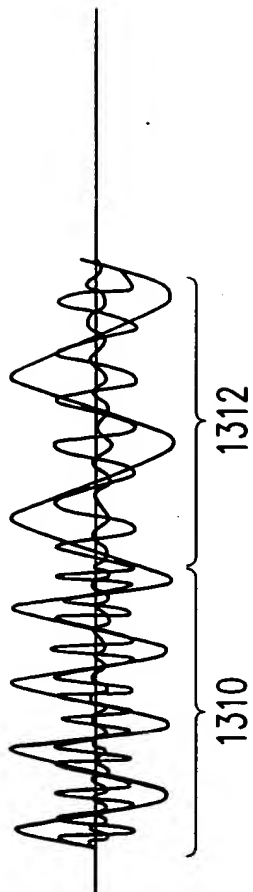
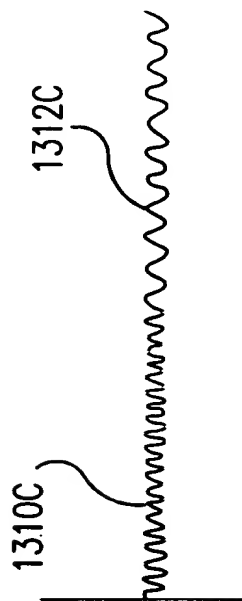


FIG.13G



HARMONICS OF  
SIGNALS 1310 AND  
1312  
(SHOWN SIMULTANEOUSLY  
BUT NOT SUMMED)

FIG. 13H



FILTERED  
OUTPUT  
SIGNAL  
1314

FIG. 13I



UNIFIED DOWNCONVERTING AND  
 FILTERING (UDF) MODULE 1402

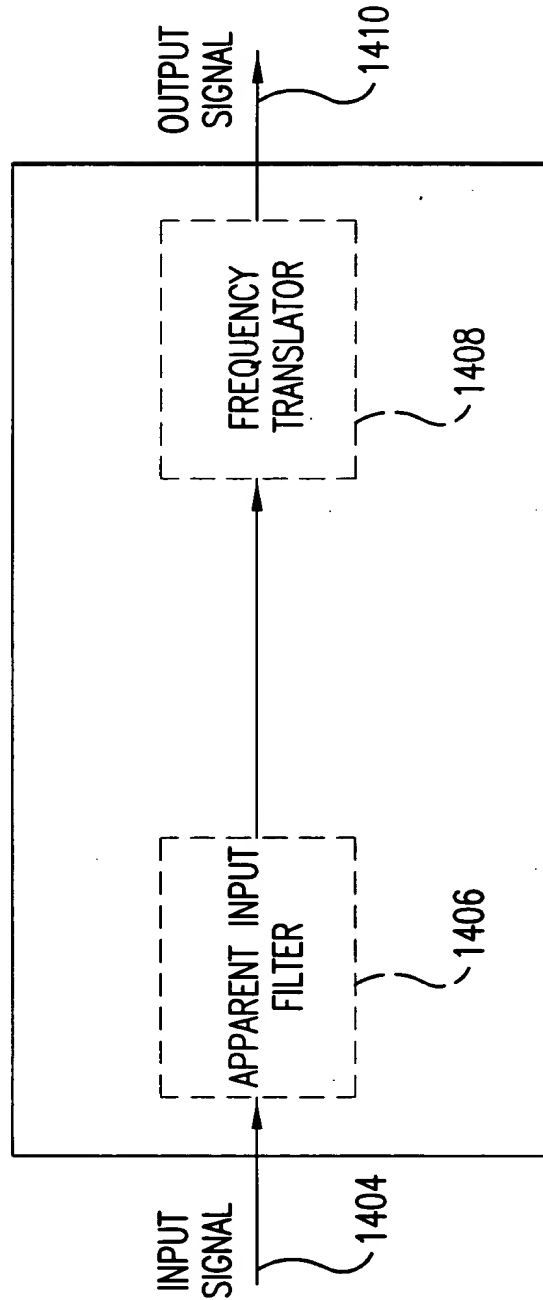


FIG. 14

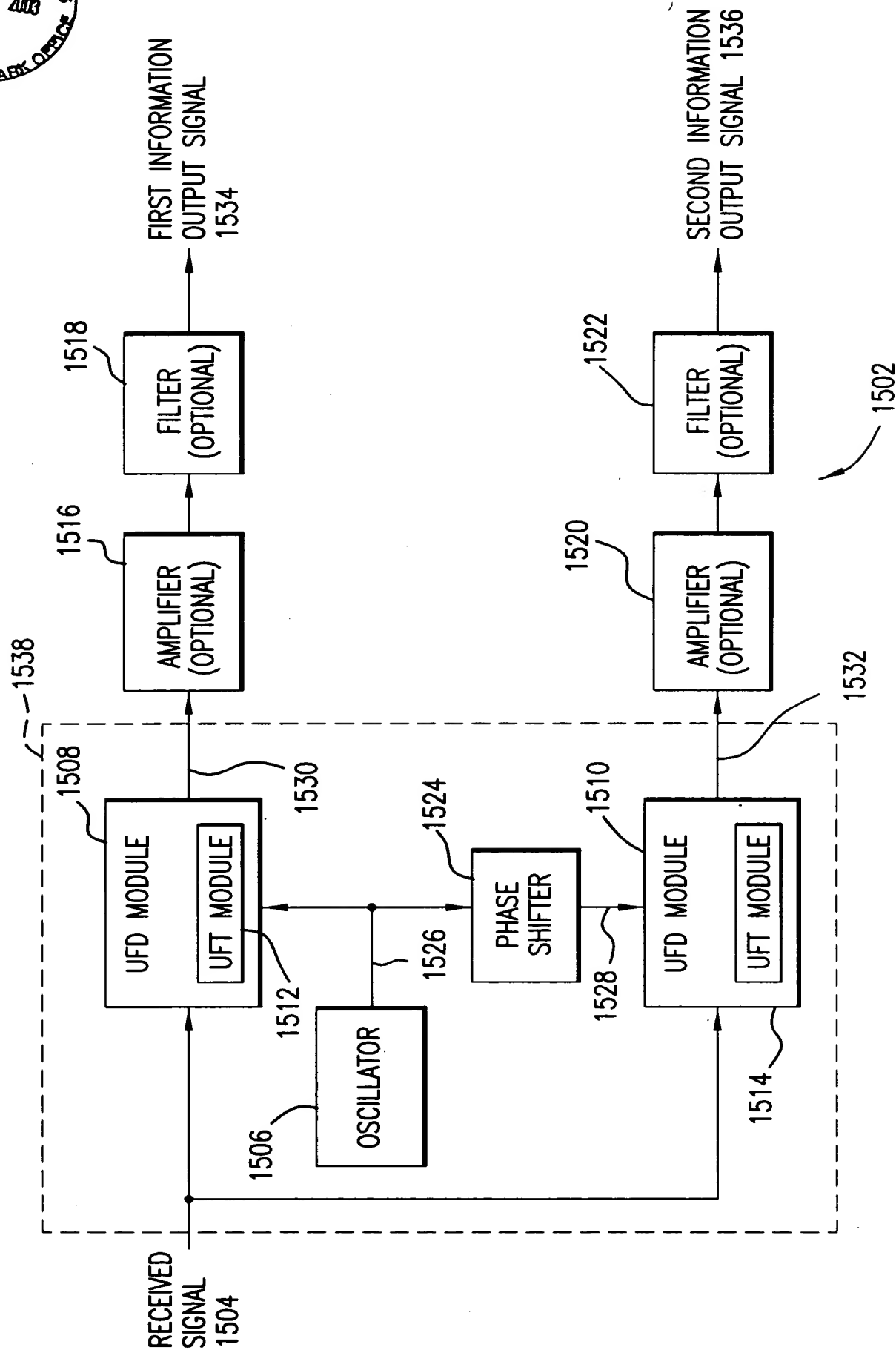


FIG.15

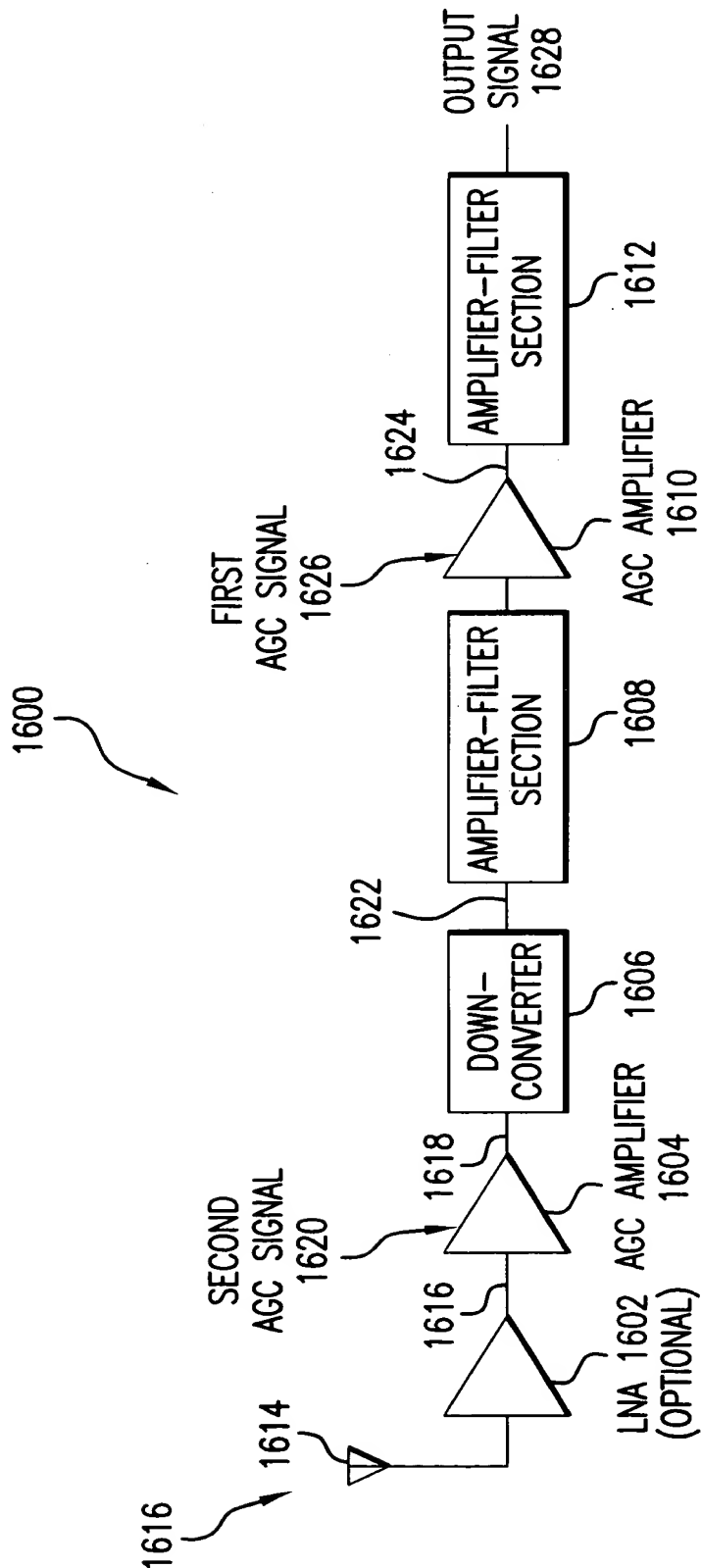


FIG. 16

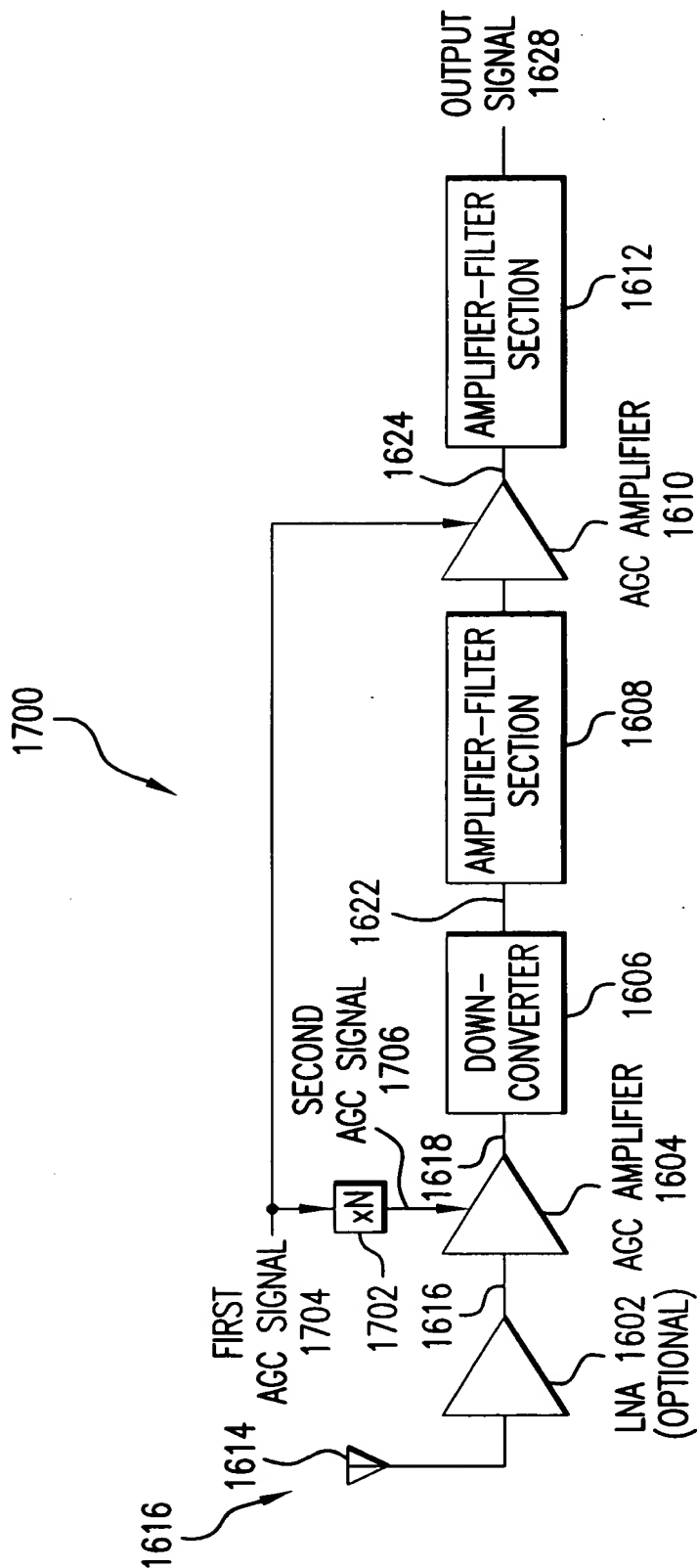


FIG. 17



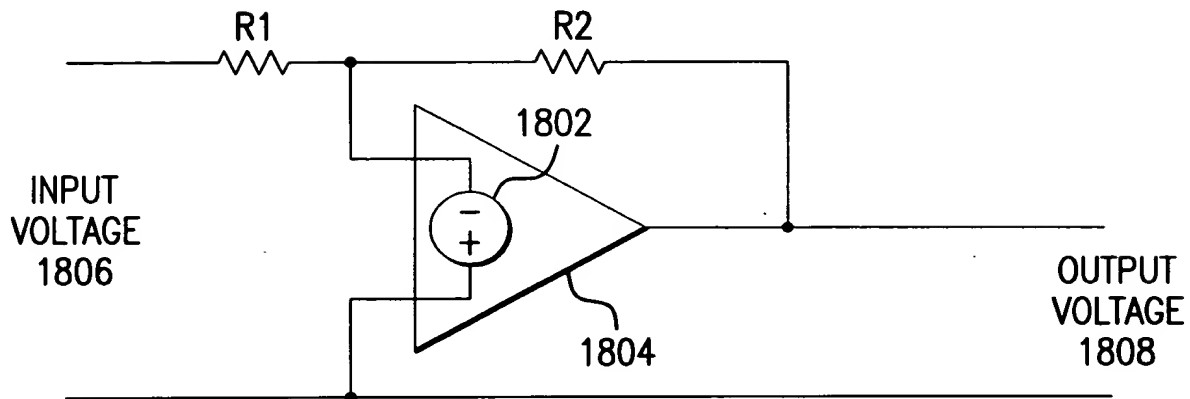


FIG. 18

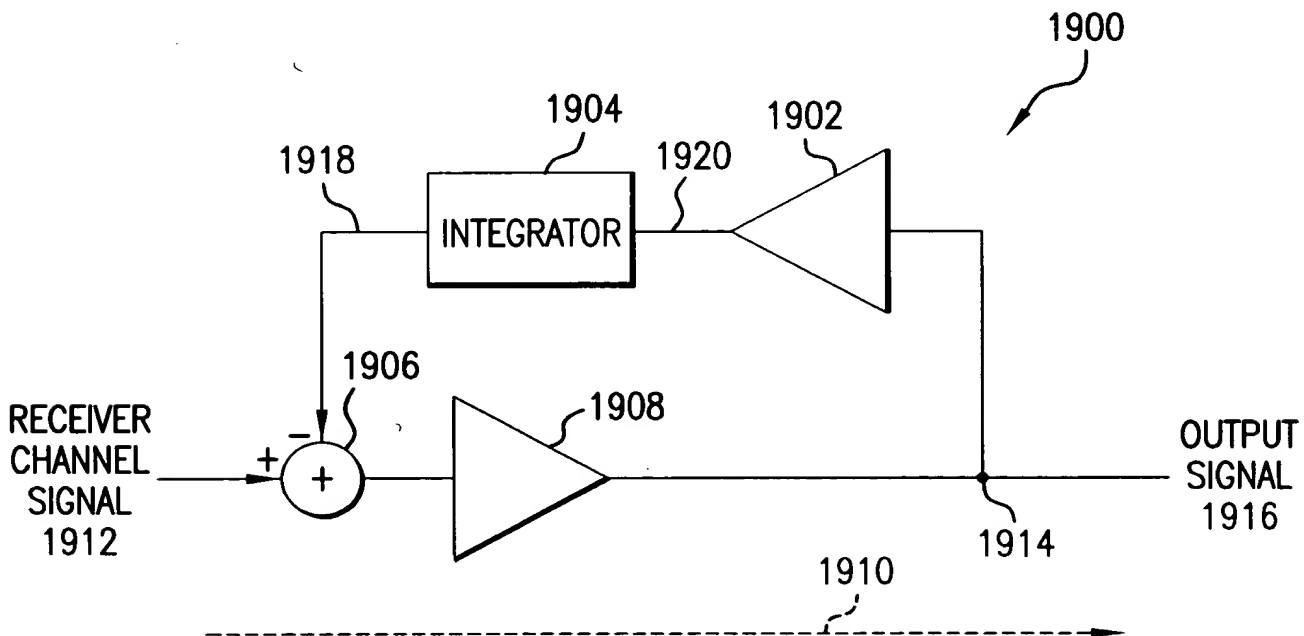


FIG. 19

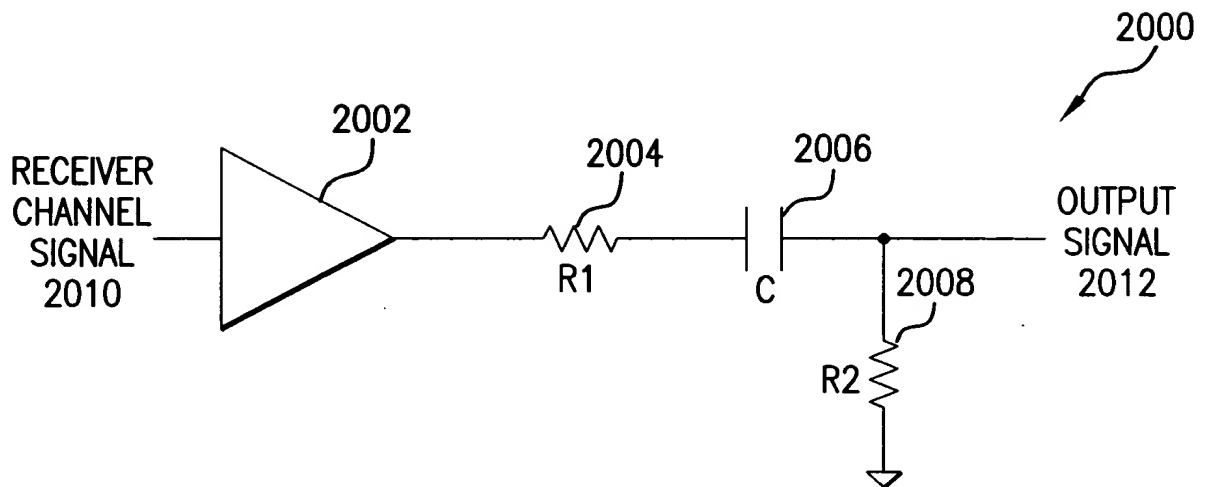


FIG. 20

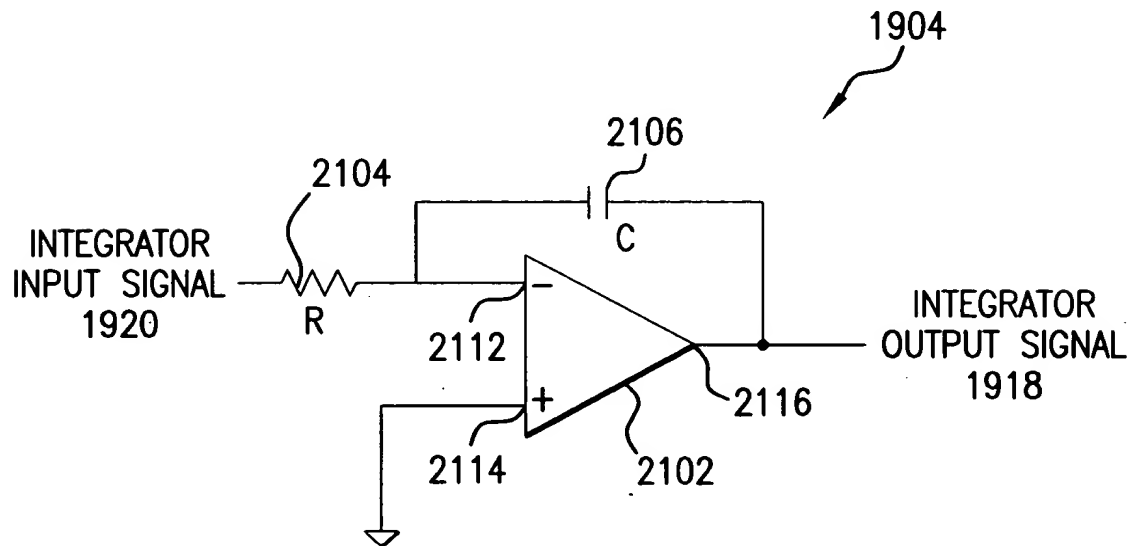


FIG. 21

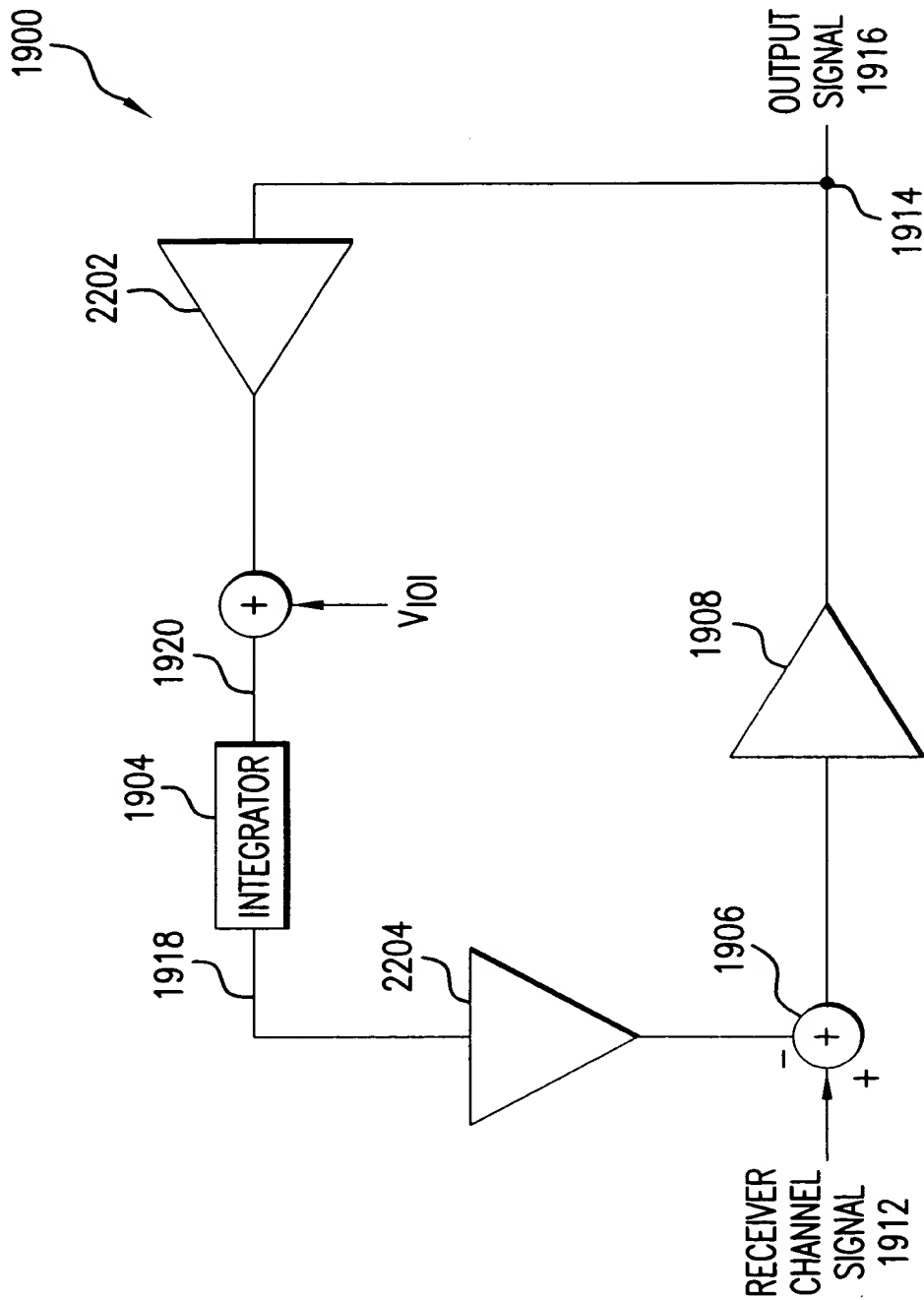


FIG. 22

OIP  
APR 03 2003  
PATENT & TRADEMARK OFFICE

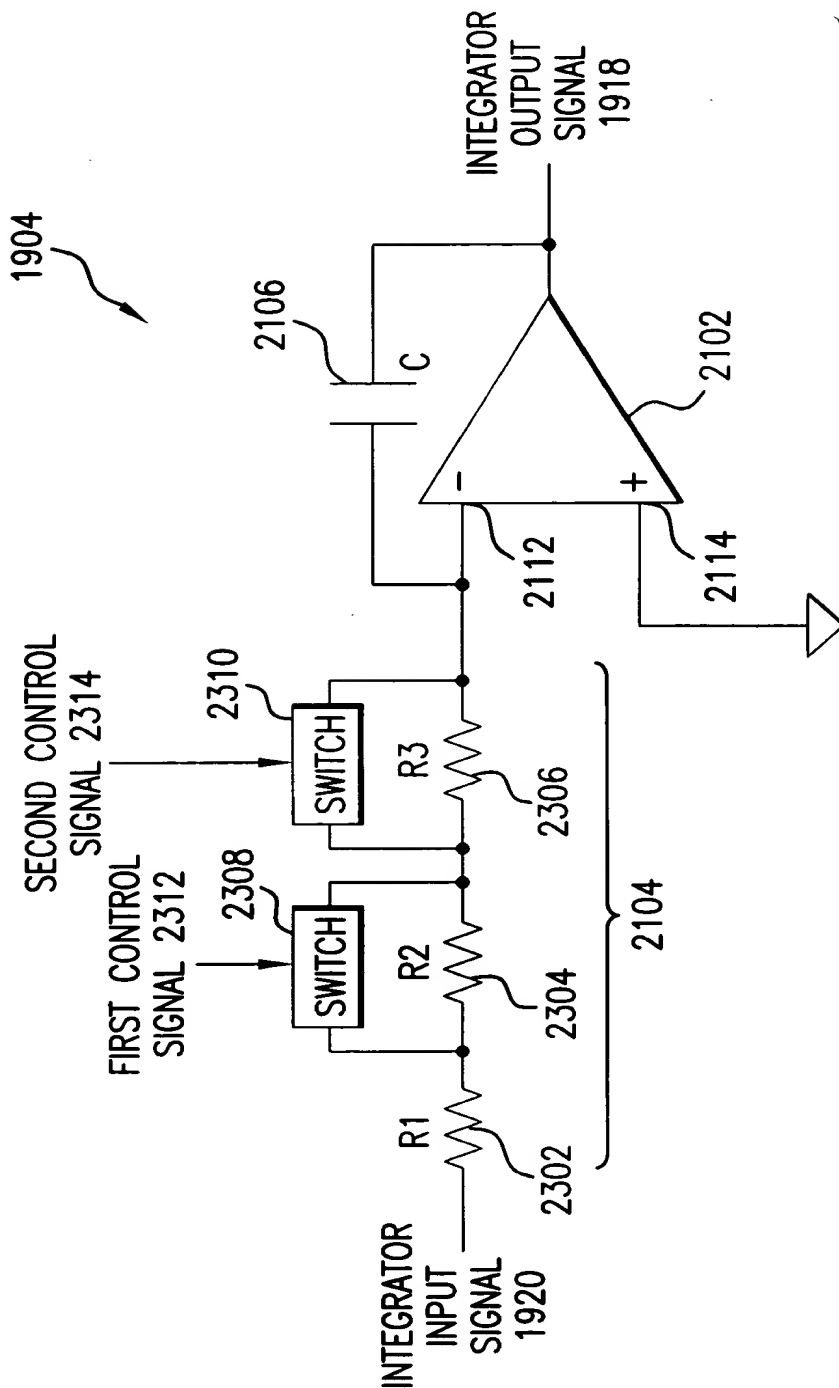


FIG. 23

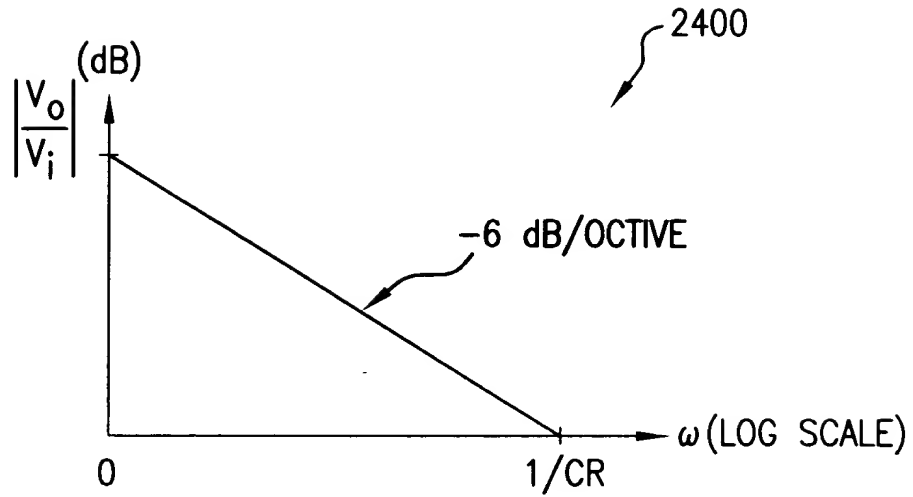


FIG. 24A

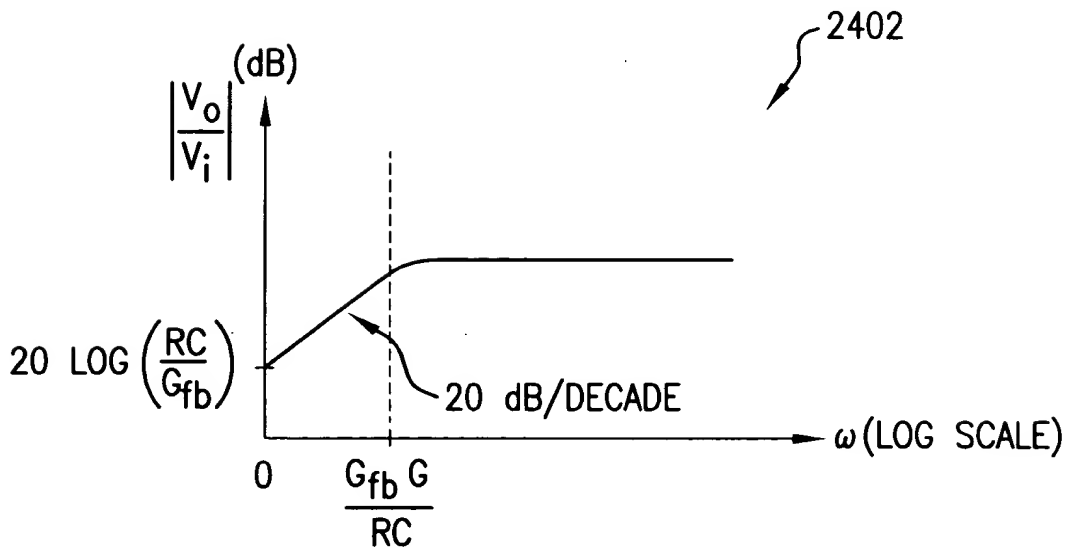


FIG. 24B

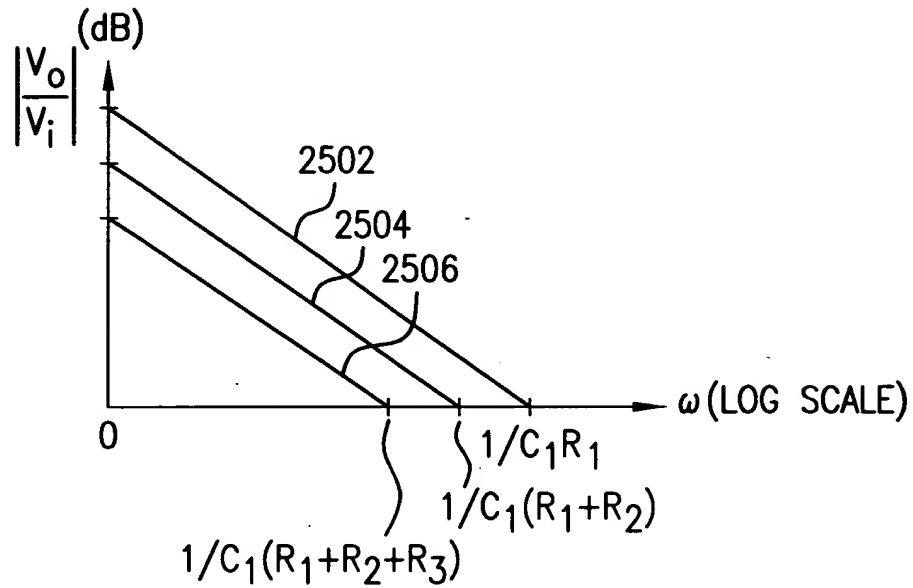


FIG. 25A

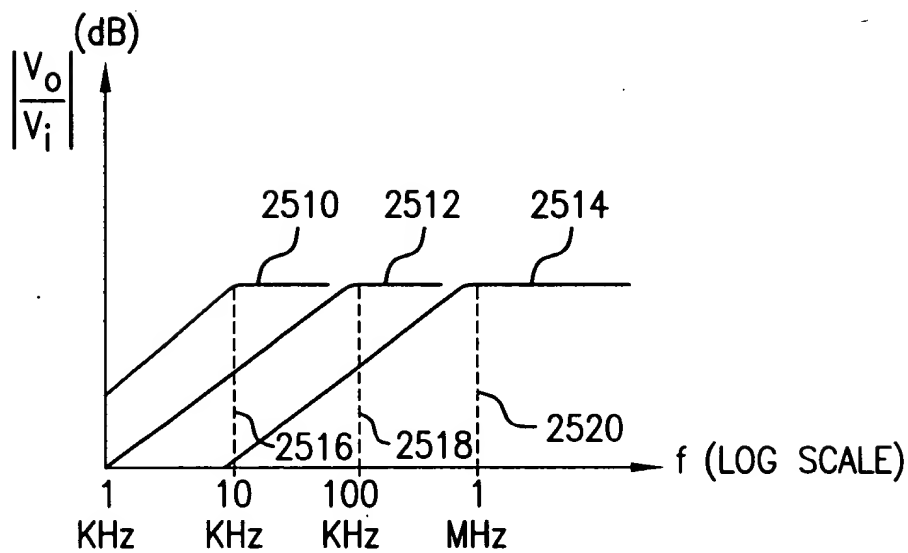


FIG. 25B

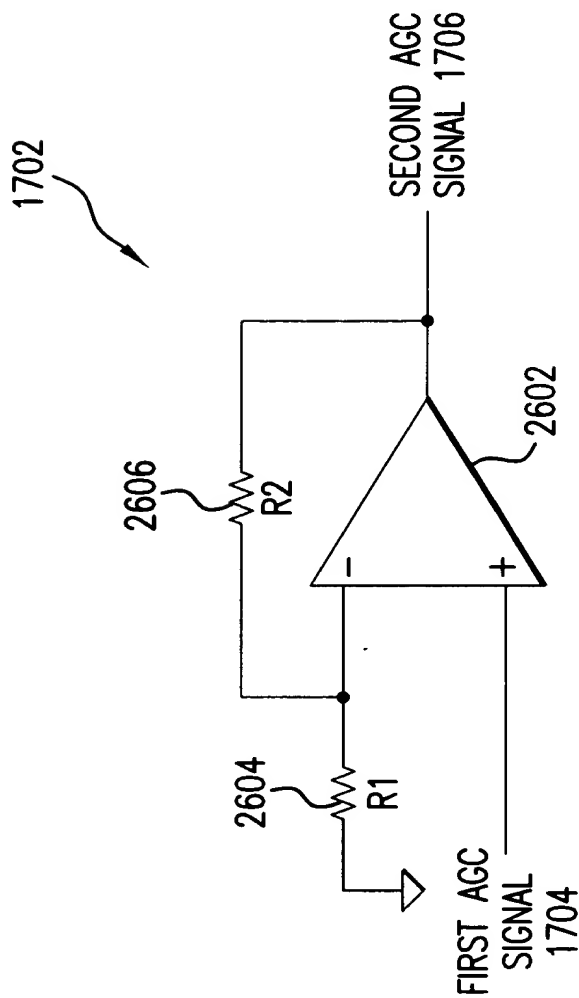


FIG. 26

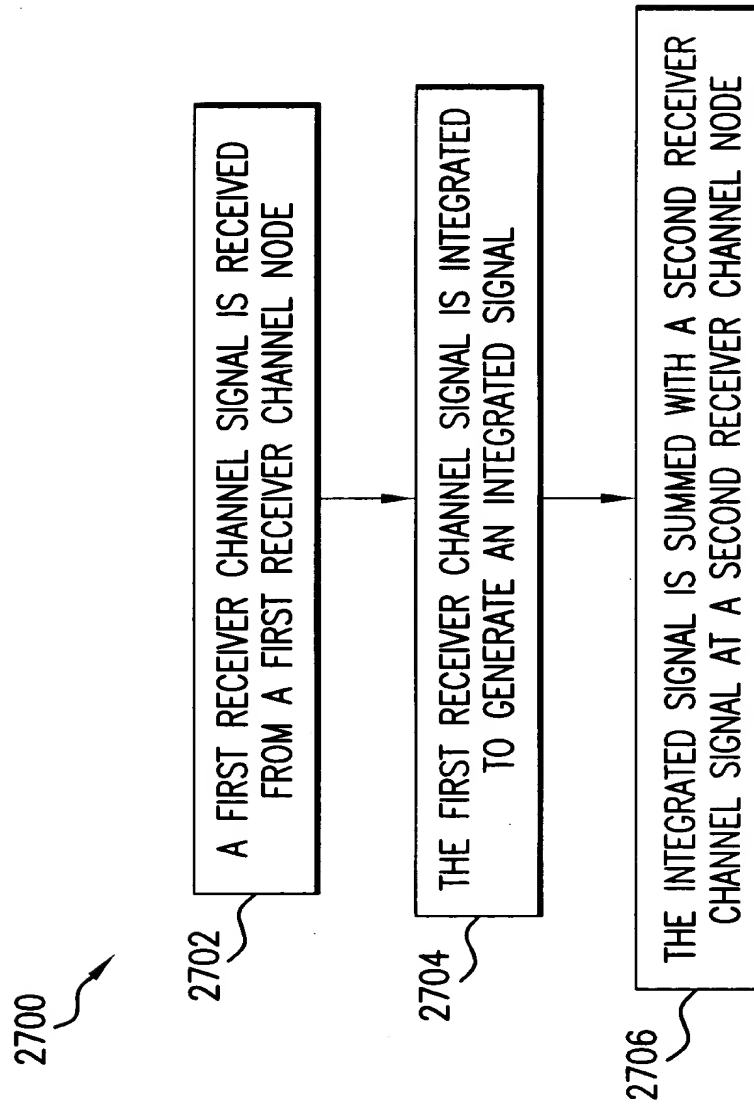


FIG. 27



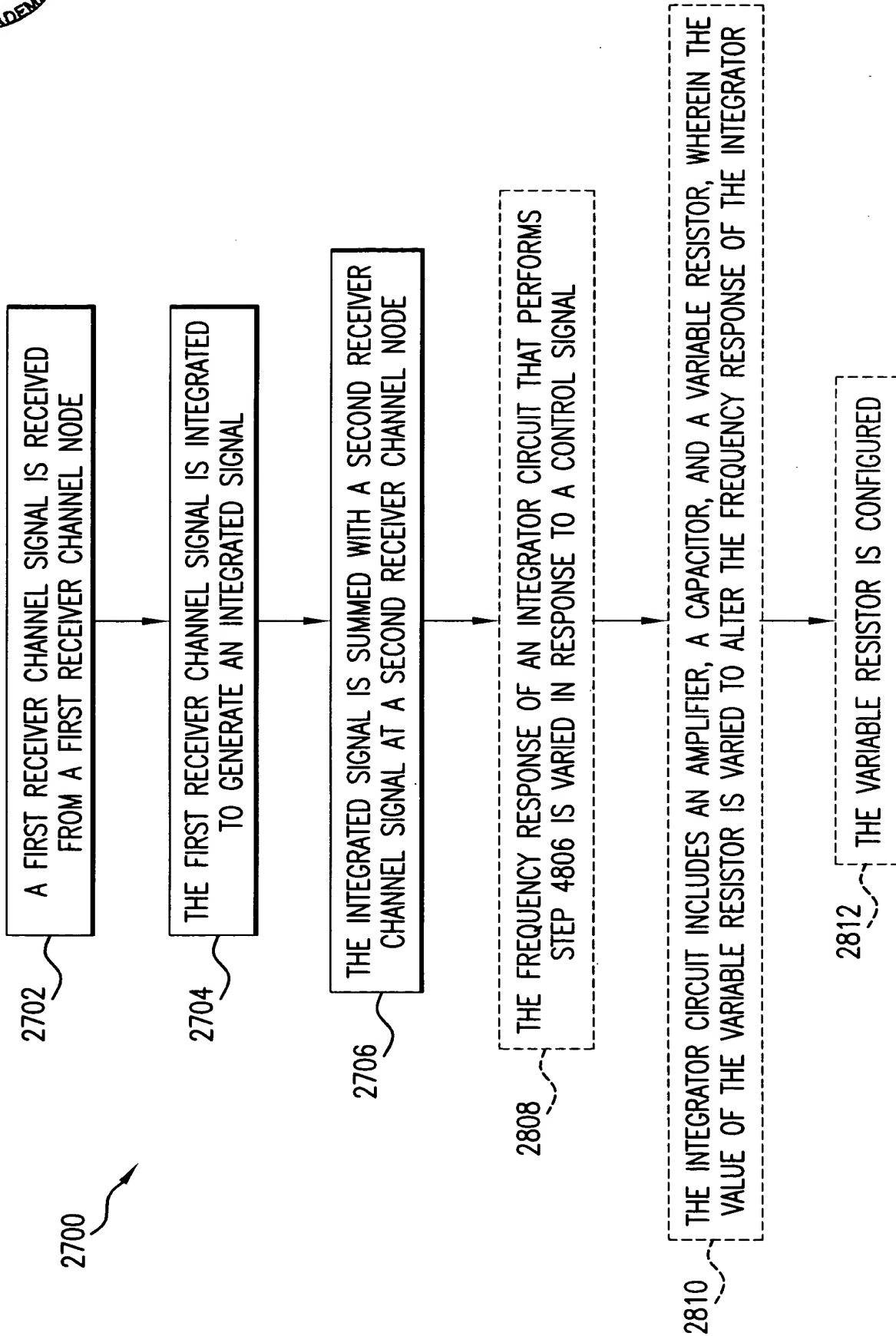


FIG. 28

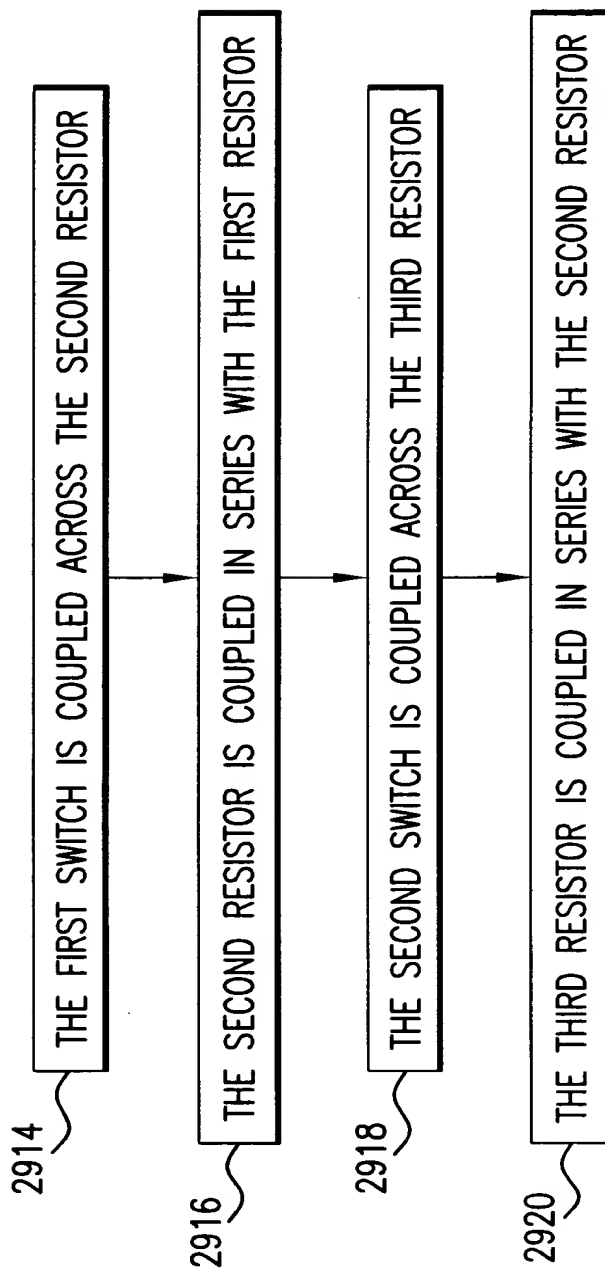


FIG. 29



Appl. No. 09/986,764; Filed: November 9, 2001  
Dkt. No. 1744.1330000; Group Art Unit: 2631  
Inventors: Rawlins *et al.*; Tel: 202/371-2600  
Title: Method and Apparatus for Reducing DC Offsets  
In a Communication System

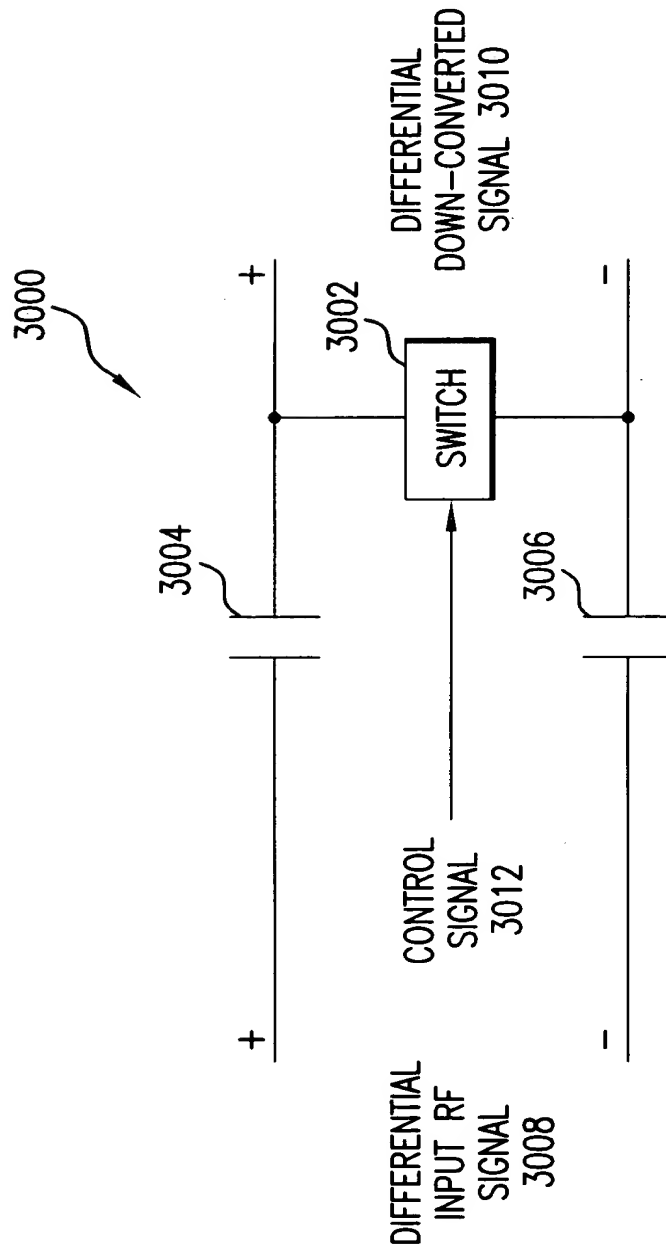


FIG. 30

FIG. 31A

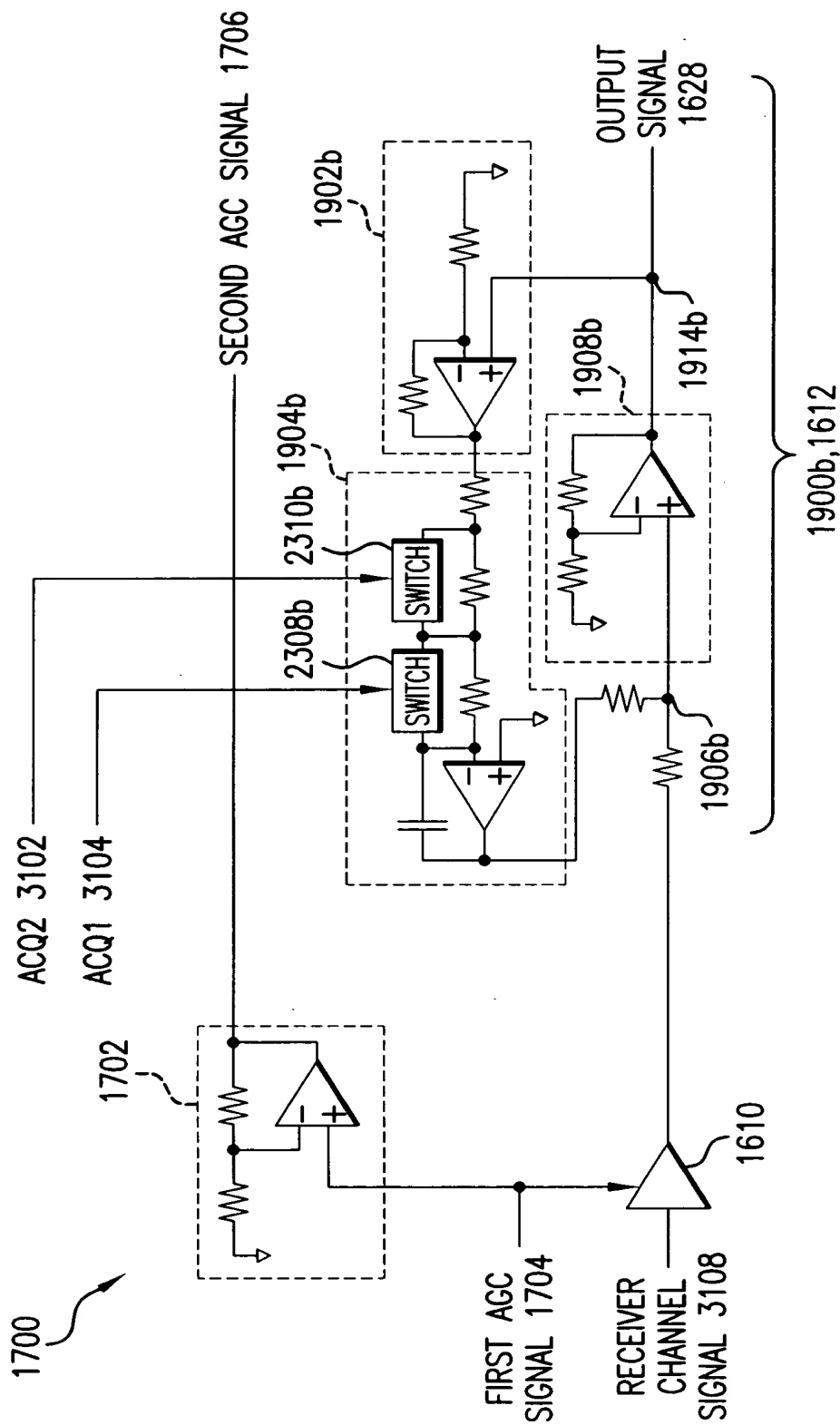


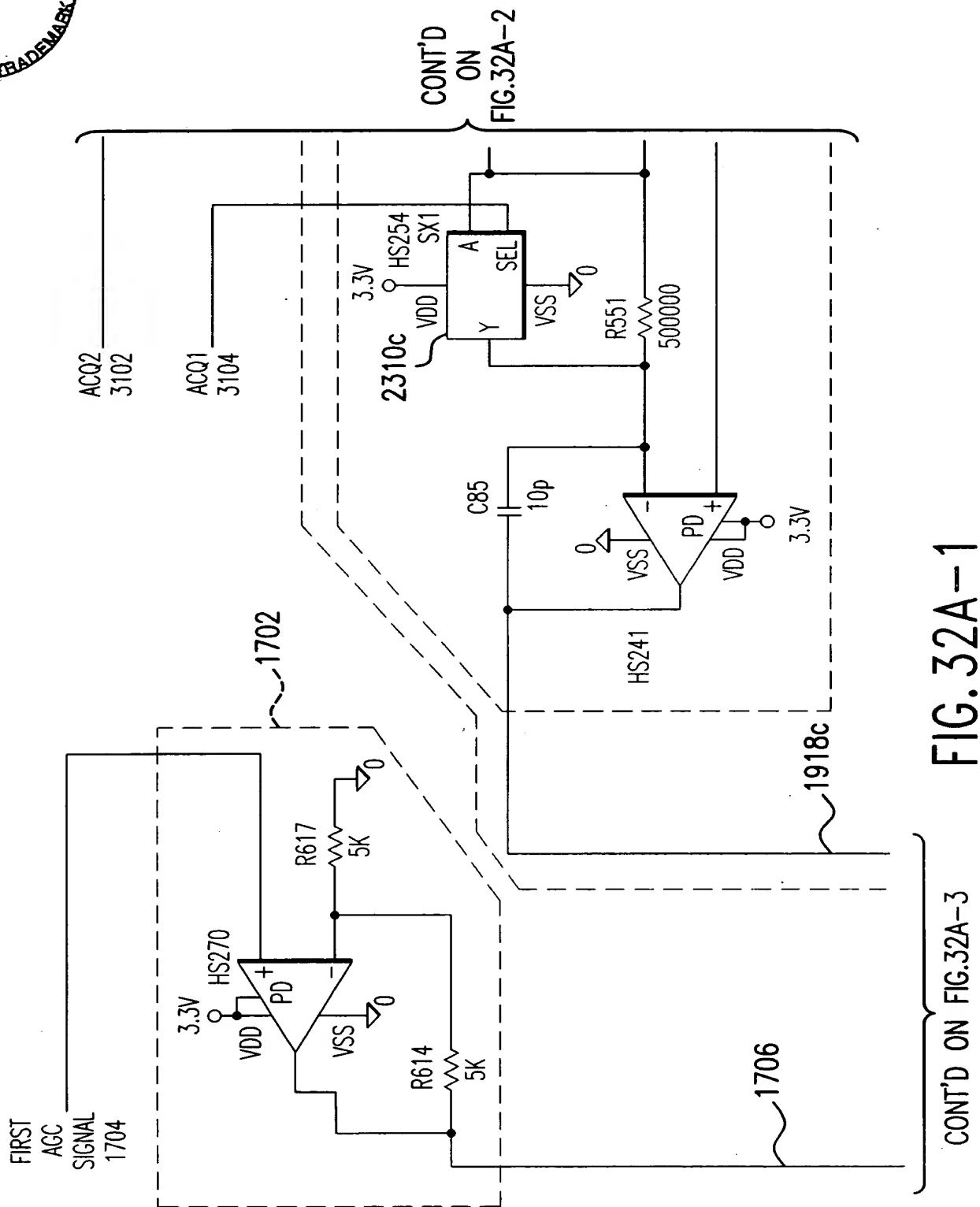
FIG. 31B

Appl. No. 09/986,764; Filed: November 9, 2001  
 Dkt. No. 1744.1330000; Group Art Unit: 2631  
 Inventors: Rawlins *et al.*; Tel: 202/371-2600  
 Title: Method and Apparatus for Reducing DC Offsets  
 in a Communication System



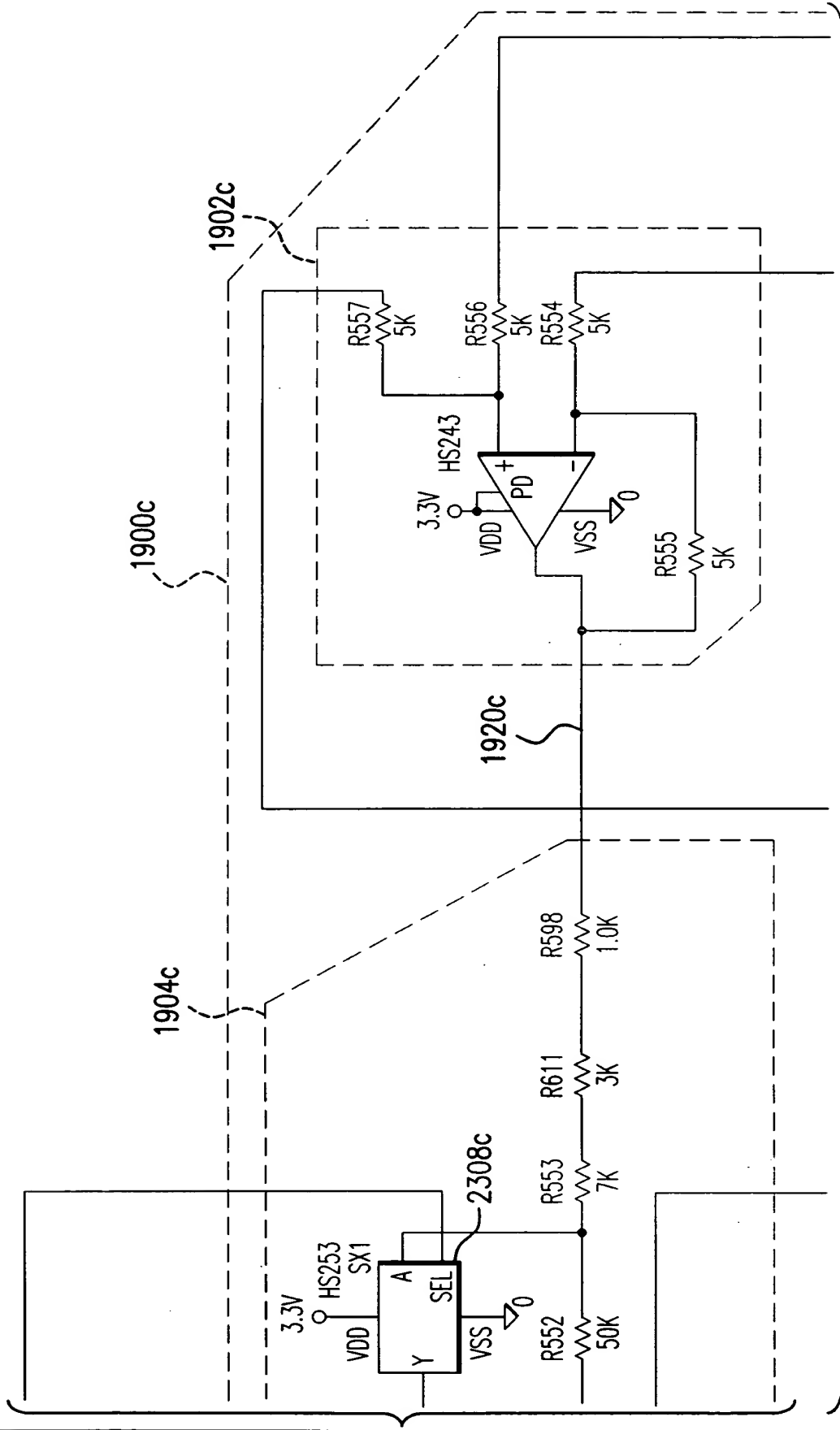
FIG.32A-1	FIG.32A-2
FIG.32A-3	FIG.32A-4

FIG. 32A





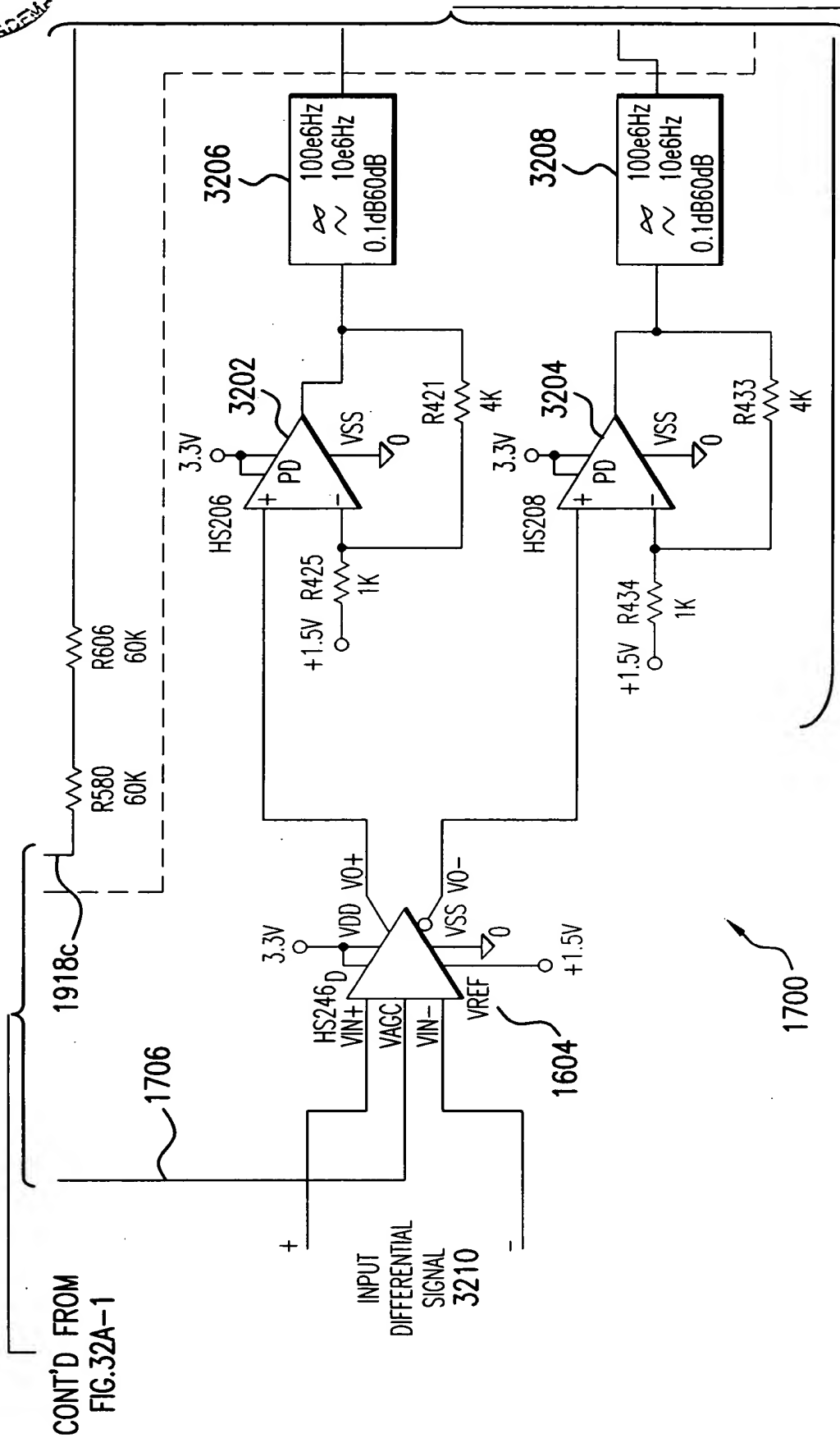
CONT'D FROM  
FIG. 32A-1

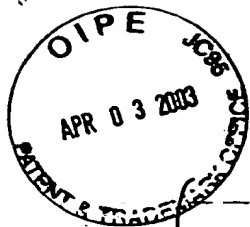


CONT'D ON  
FIG. 32A-4

FIG. 32A-2







CONT'D FROM FIG.32A-2

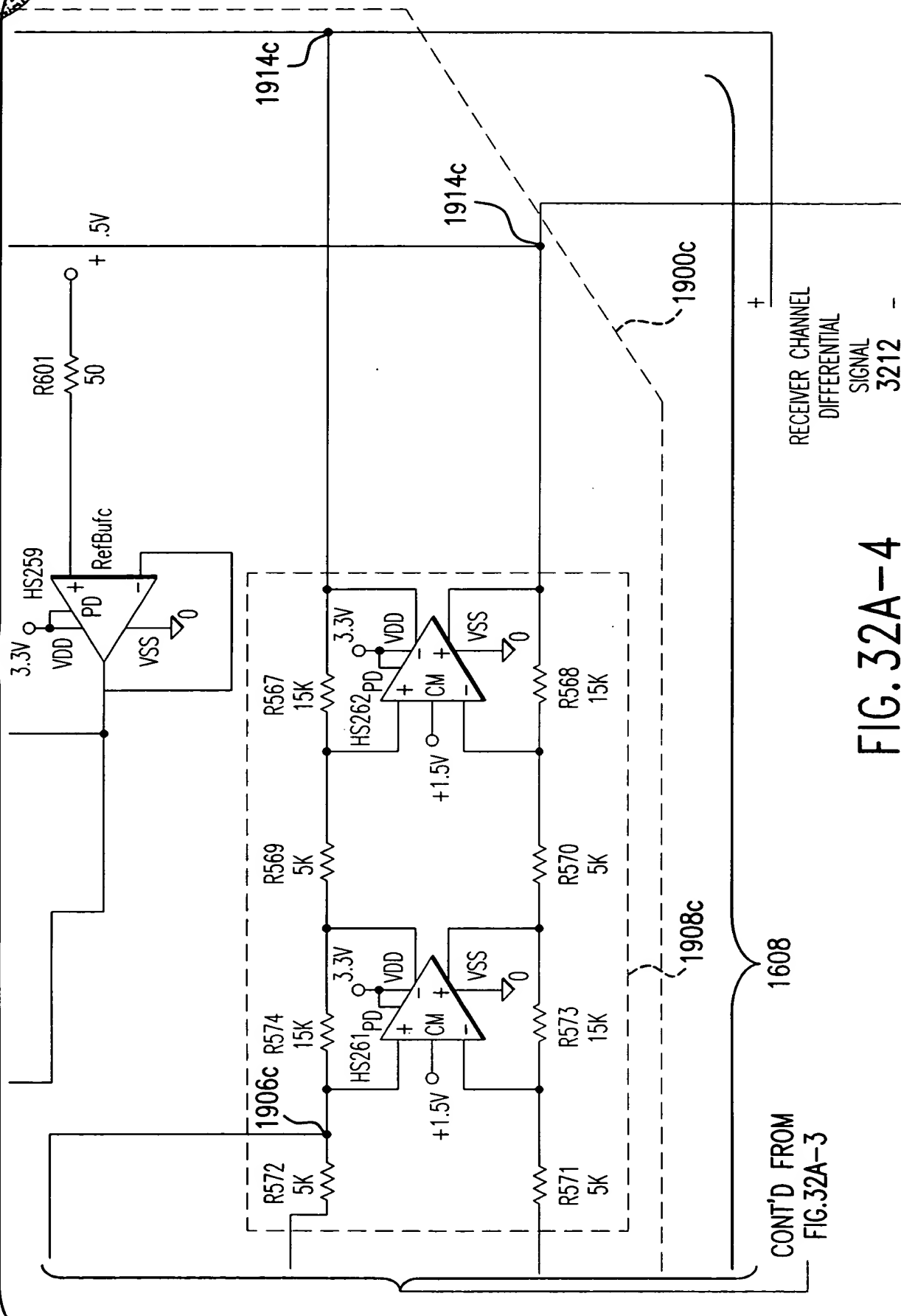


FIG. 32A-4

CONT'D FROM  
FIG. 32A-3



Appl. No. 09/986,764; Filed: November 9, 2001  
Dkt. No. 1744.1330000; Group Art Unit: 2631  
Inventors: Rawlins *et al.*; Tel: 202/371-2600  
Title: Method and Apparatus for Reducing DC Offsets  
In a Communication System

FIG.32B-1	FIG.32B-2	FIG.32B-3
-----------	-----------	-----------

FIG. 32B



CONT'D  
 ON  
 FIG.32B-2

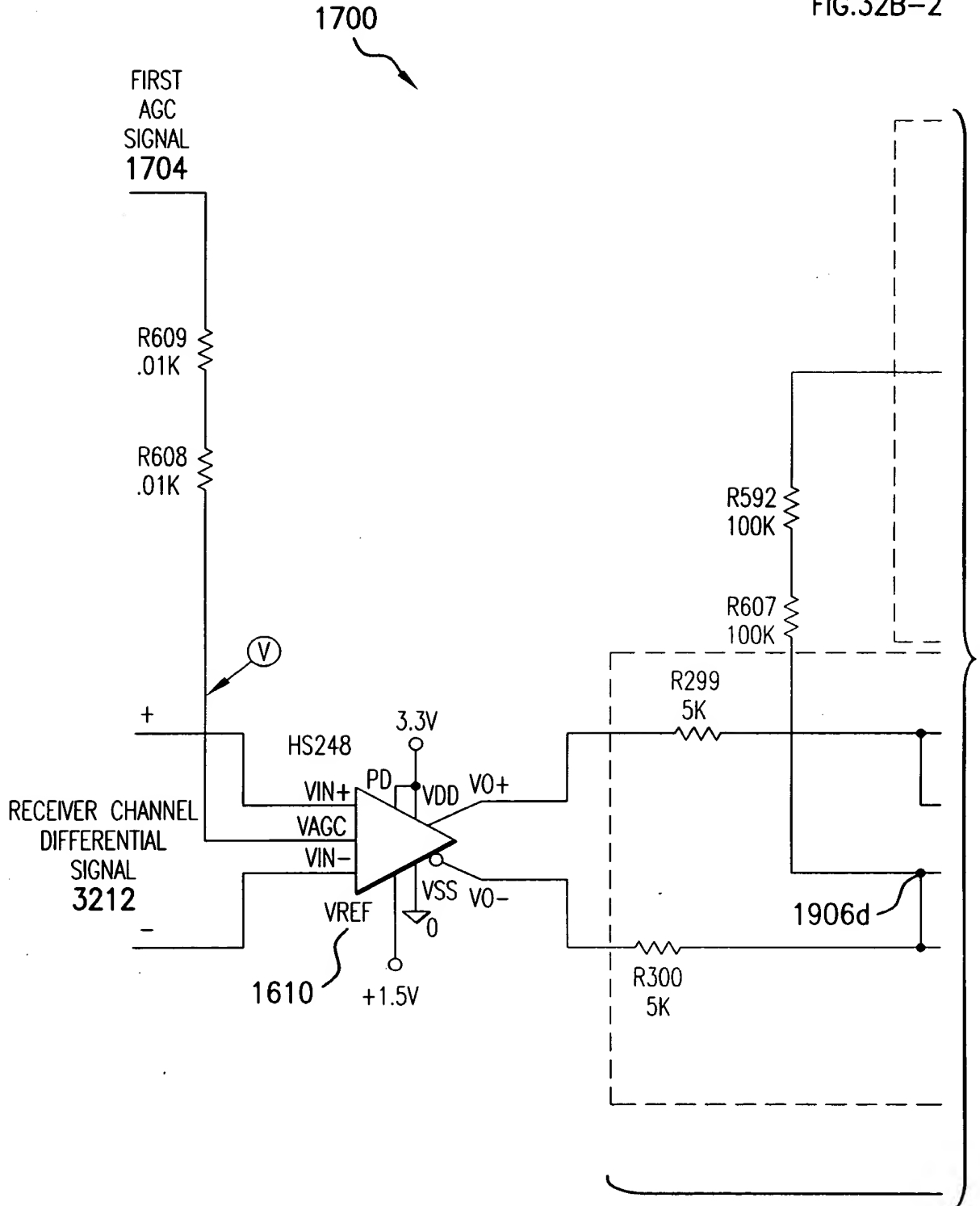


FIG. 32B-1

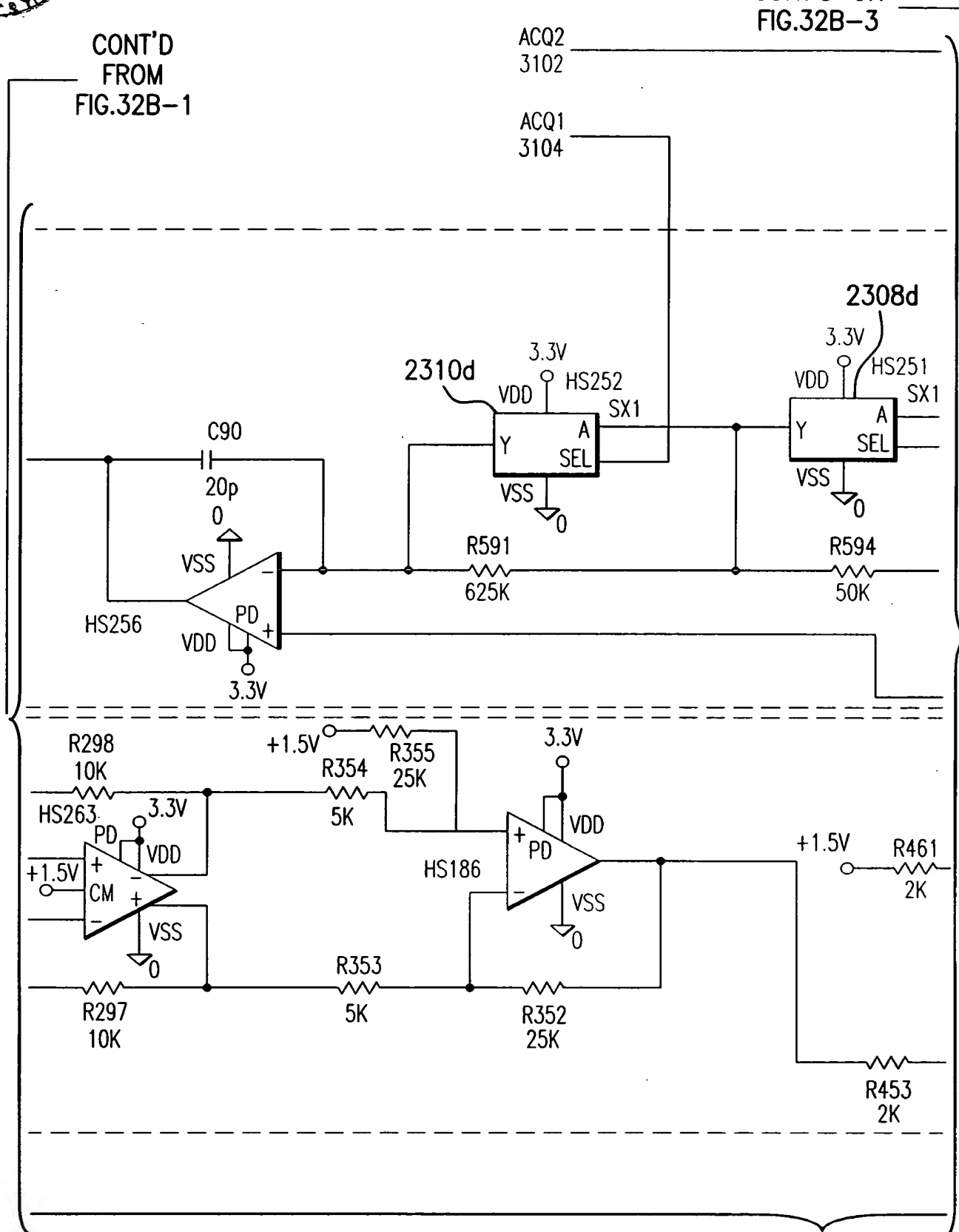
CONT'D ON  
FIG.32B-3CONT'D  
FROM  
FIG.32B-1

FIG. 32B-2

1900d, 1612

CONT'D  
 FROM  
 FIG.32B-2

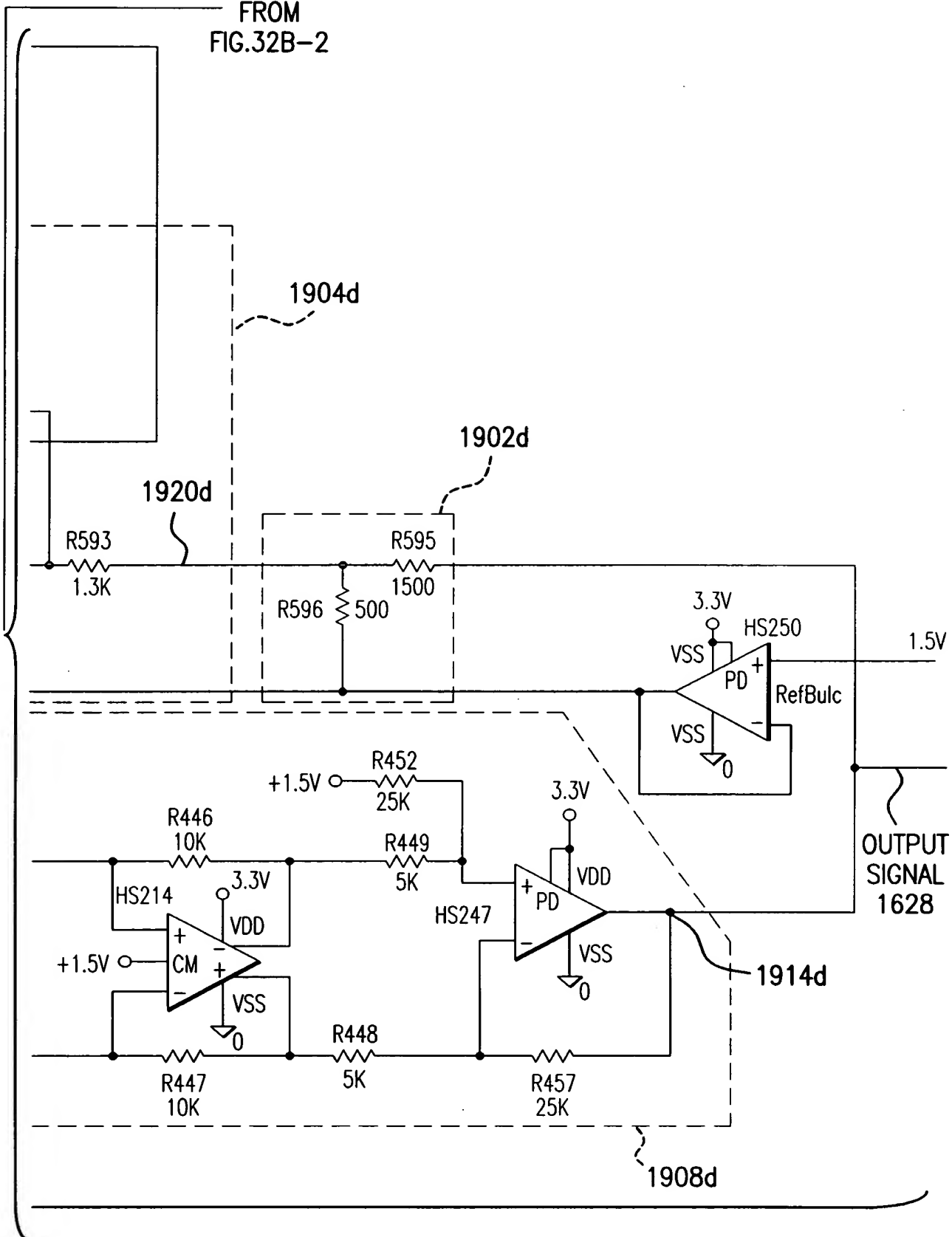


FIG. 32B-3



Appl. No. 09/986,764; Filed: November 9, 2001  
Dkt. No. 1744.1330000; Group Art Unit: 2631  
Inventors: Rawlins *et al.*; Tel: 202/371-2600  
Title: Method and Apparatus for Reducing DC Offsets  
In a Communication System

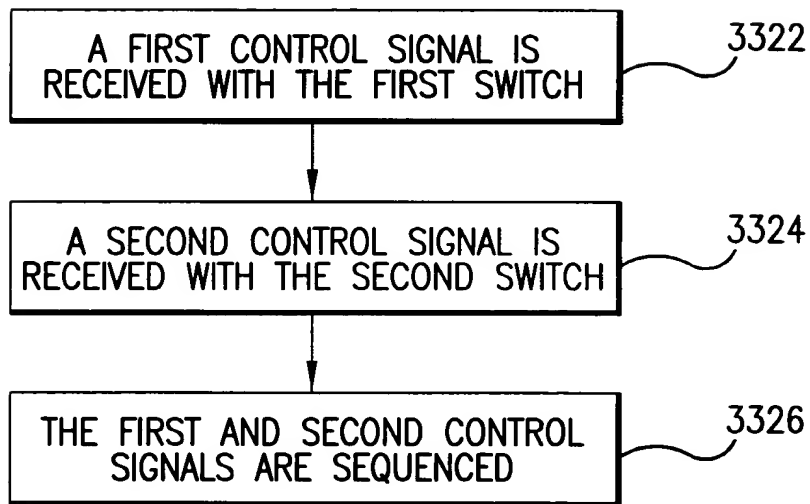


FIG. 33



2700

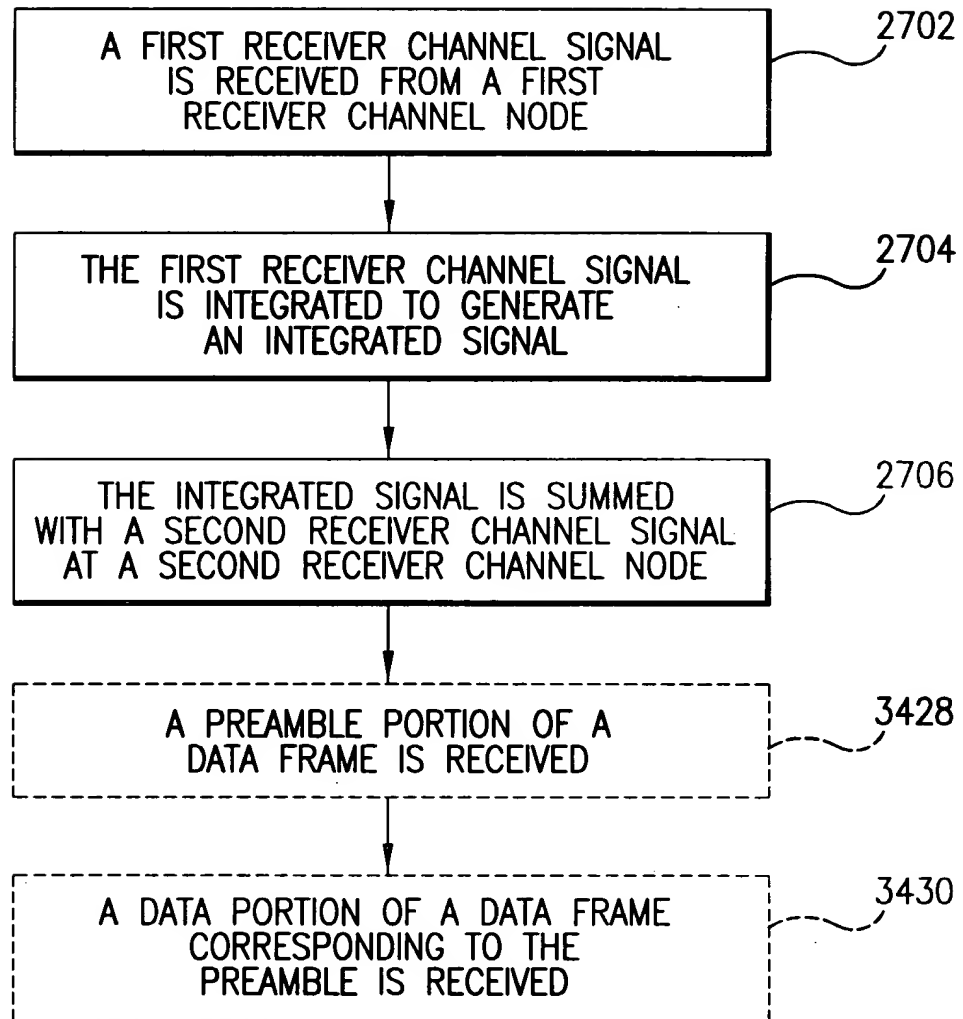


FIG. 34



Appl. No. 09/986,764; Filed: November 9, 2001  
 Dkt. No. 1744.1330000; Group Art Unit: 2631  
 Inventors: Rawlins *et al.*; Tel: 202/371-2600  
 Title: Method and Apparatus for Reducing DC Offsets  
 In a Communication System

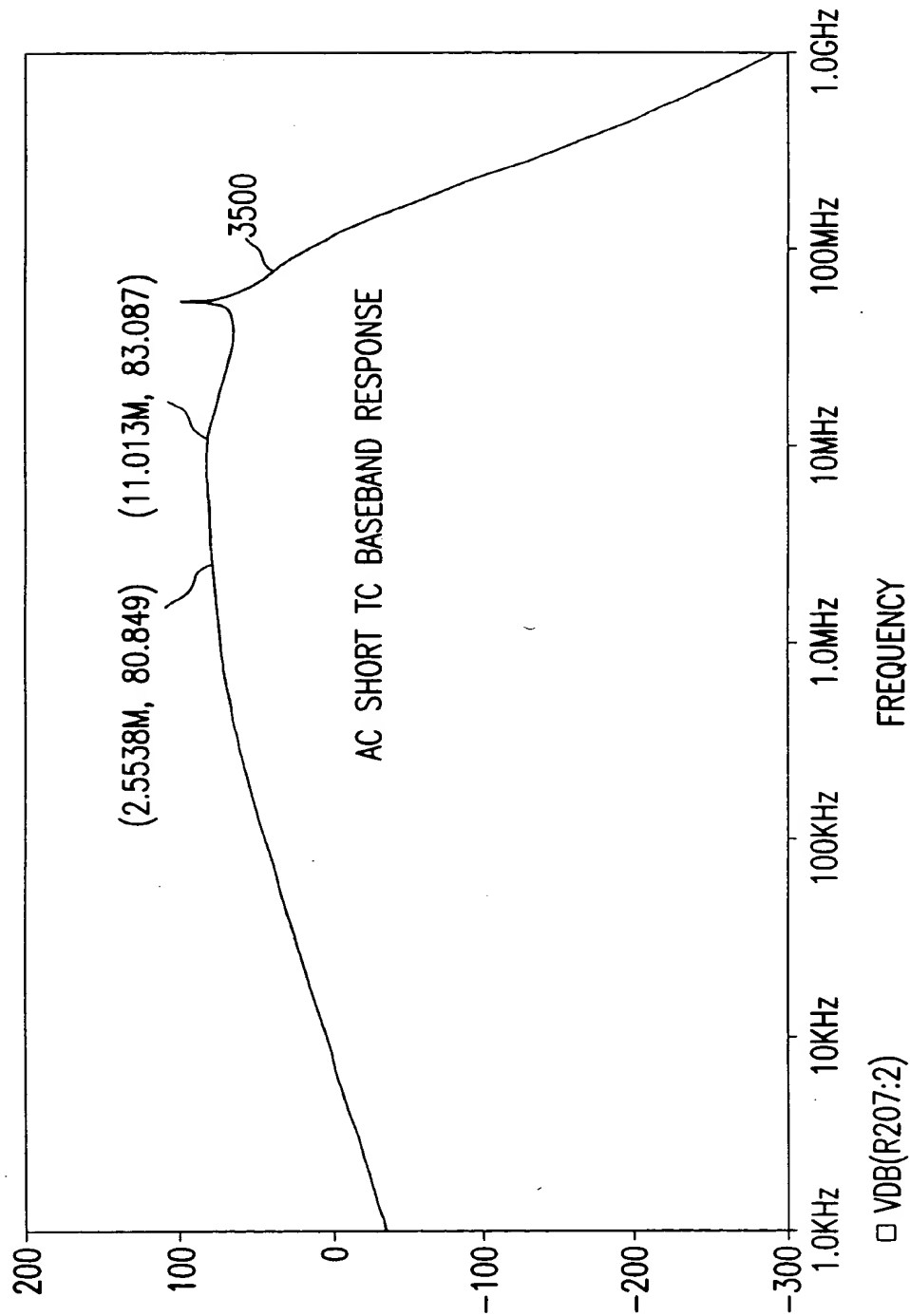


FIG.35

Appl. No. 09/986,764; Filed: November 9, 2001  
 Dkt. No. 1744.1330000; Group Art Unit: 2631  
 Inventors: Rawlins *et al.*; Tel: 202/371-2600  
 Title: Method and Apparatus for Reducing DC Offsets  
 In a Communication System

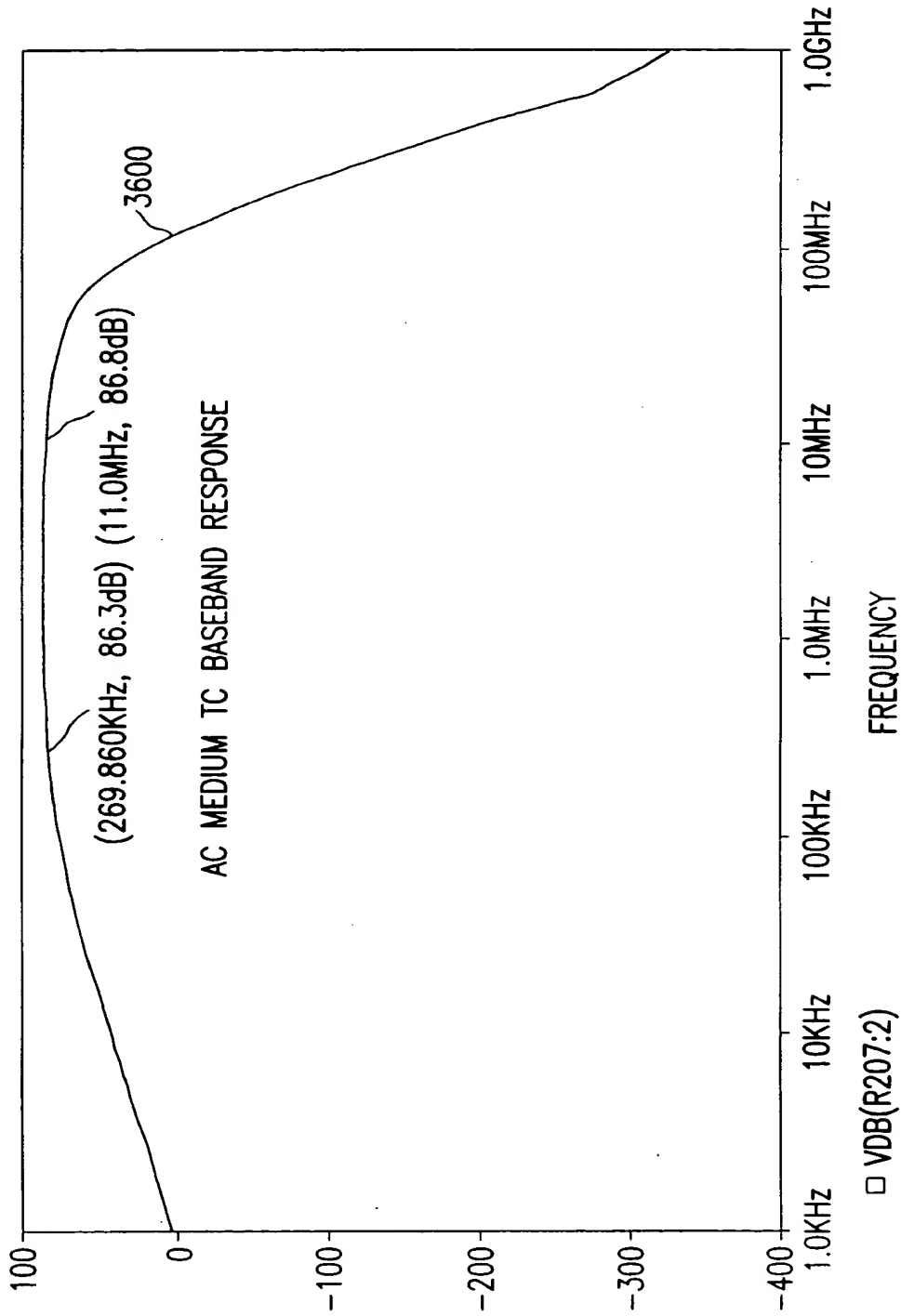


FIG.36

Appl. No. 09/986,764; Filed: November 9, 2001  
 Dkt. No. 1744.1330000; Group Art Unit: 2631  
 Inventors: Rawlins *et al.*; Tel: 202/371-2600  
 Title: Method and Apparatus for Reducing DC Offsets  
 In a Communication System

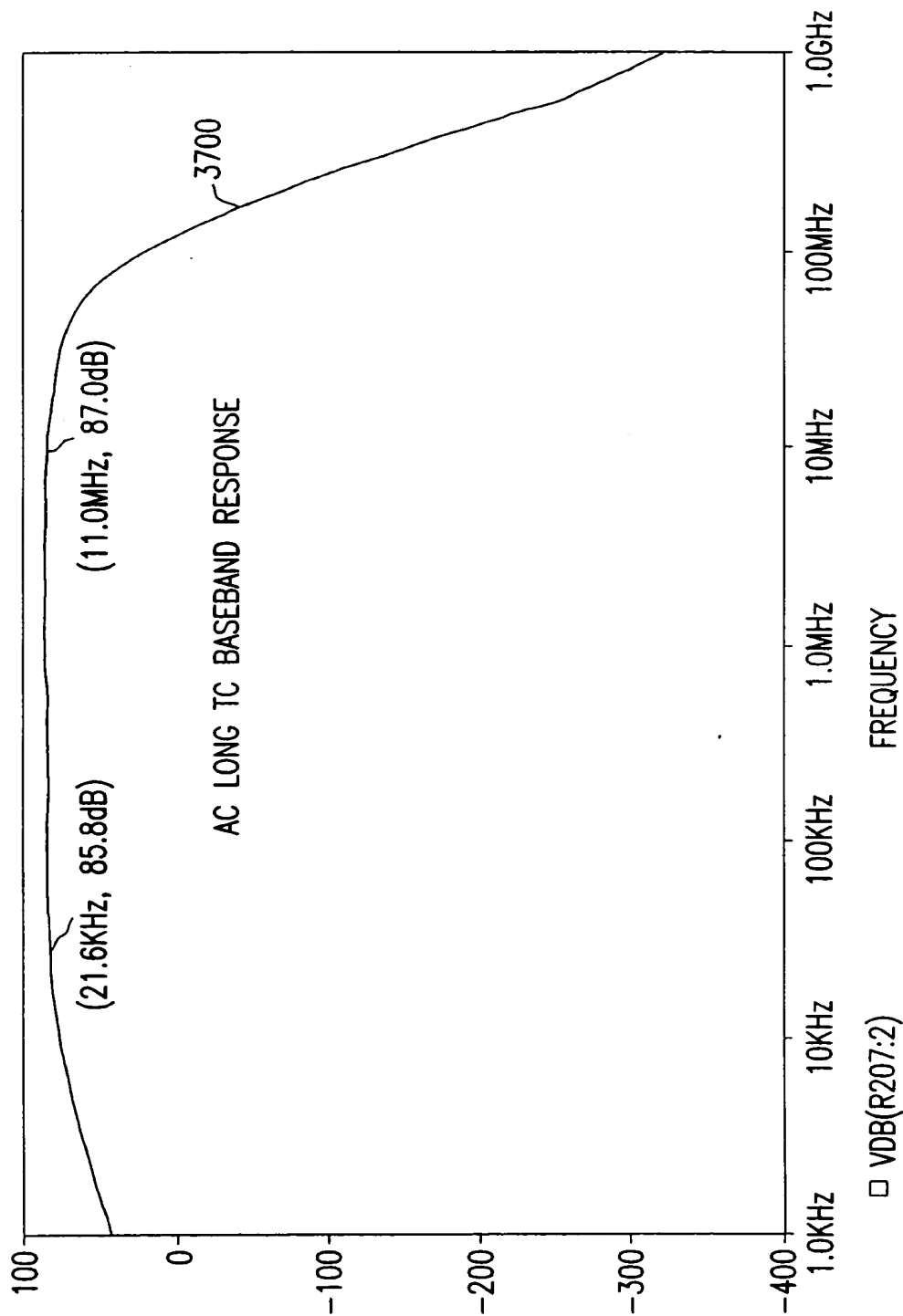


FIG.37

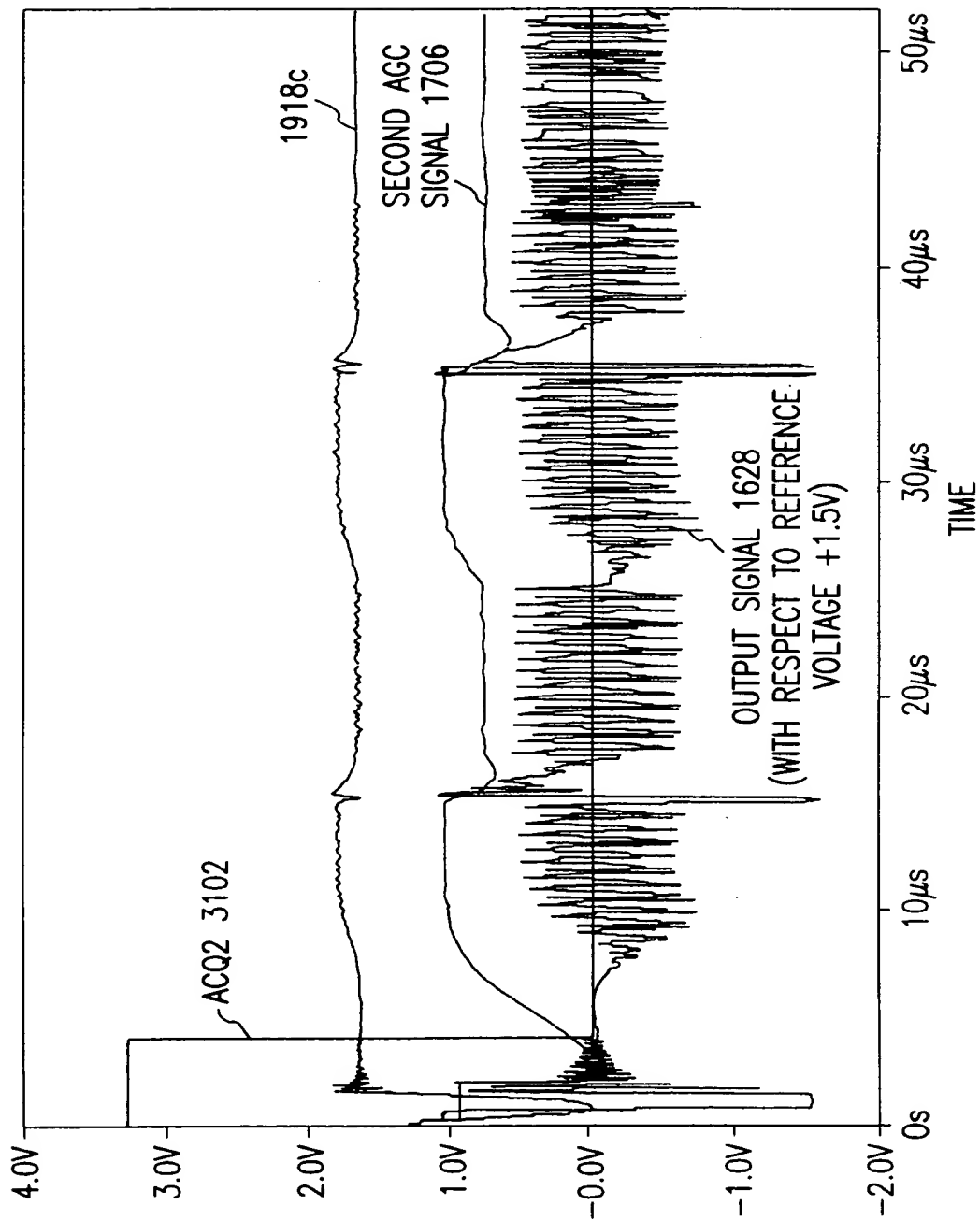


FIG.38

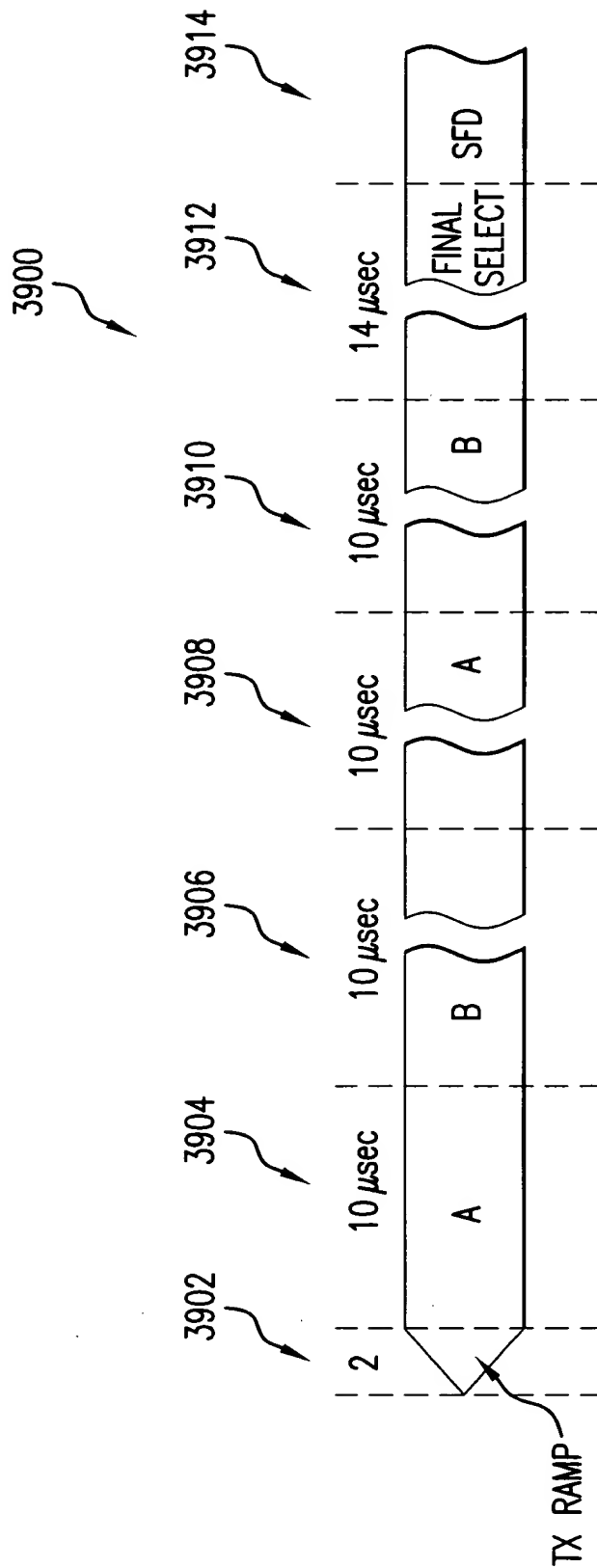


FIG. 39

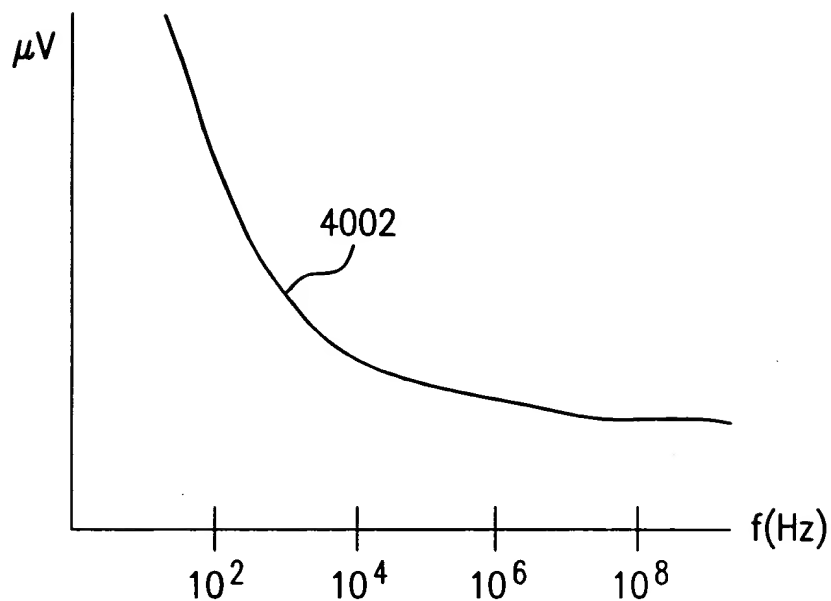


FIG. 40

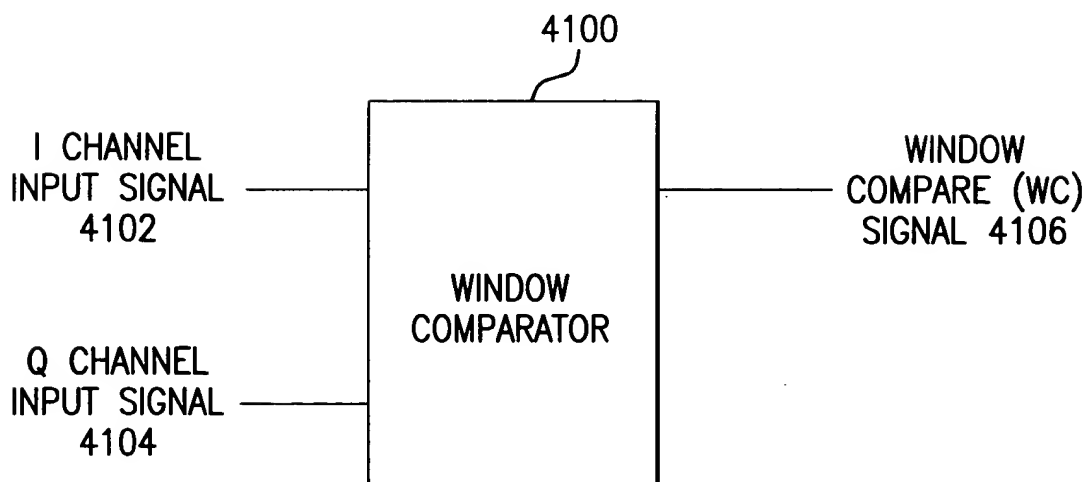


FIG. 41

Appl. No. 09/986,764; Filed: November 9, 2001  
 Dkt. No. 1744.1330000; Group Art Unit: 2631  
 Inventors: Rawlins *et al.*; Tel: 202/371-2600  
 Title: Method and Apparatus for Reducing DC Offsets  
 In a Communication System

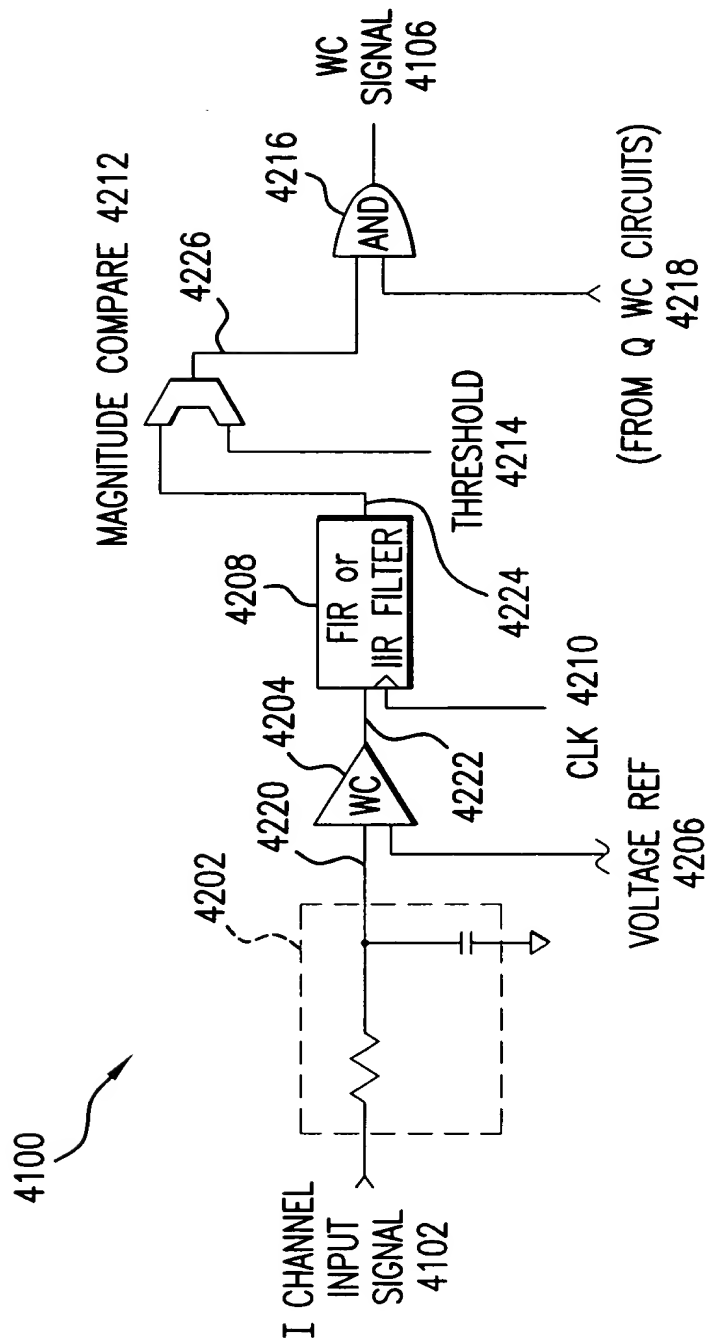


FIG. 42

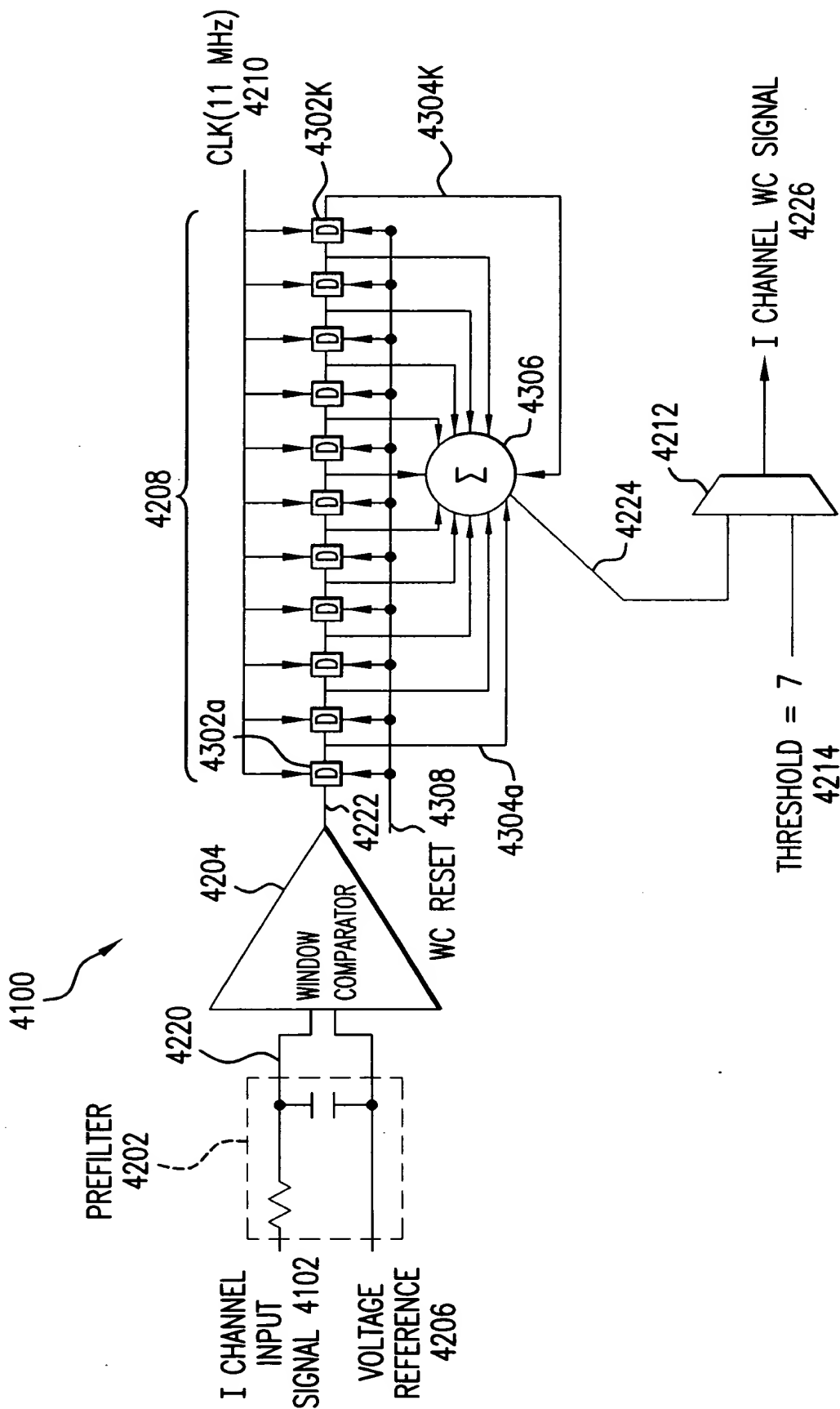


FIG. 43



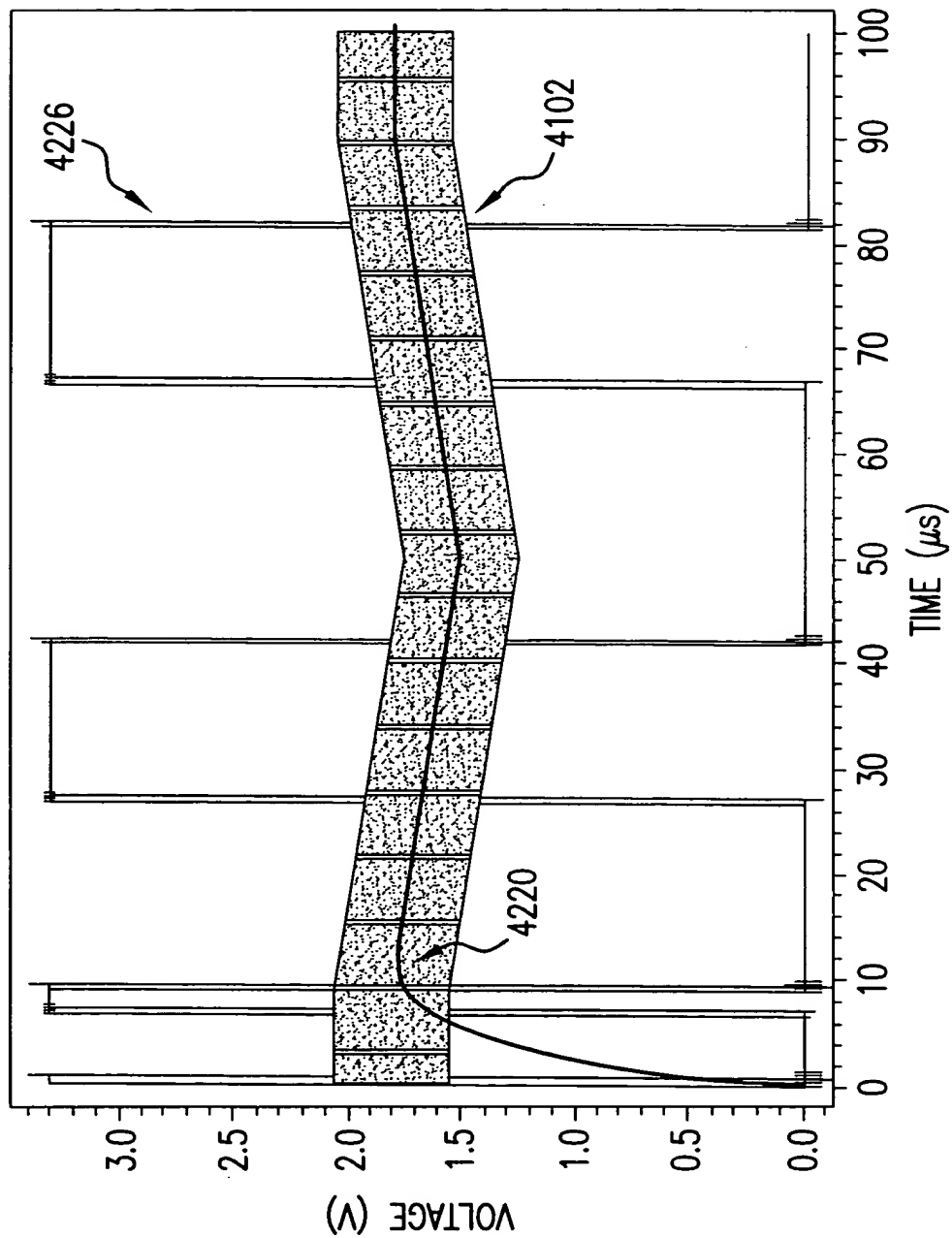


FIG. 44

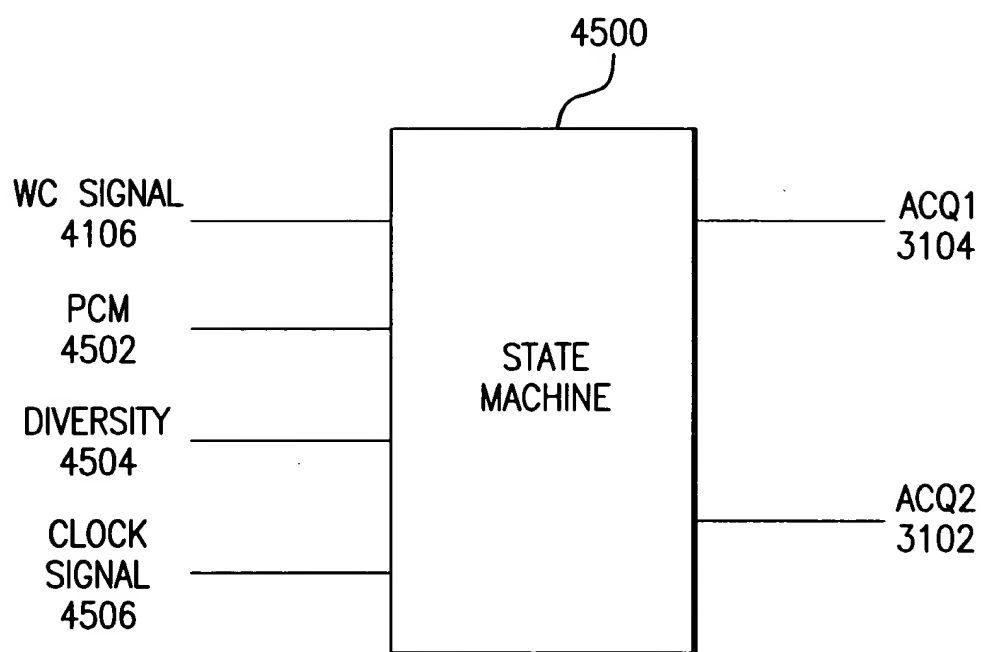


FIG. 45

FIG. 46

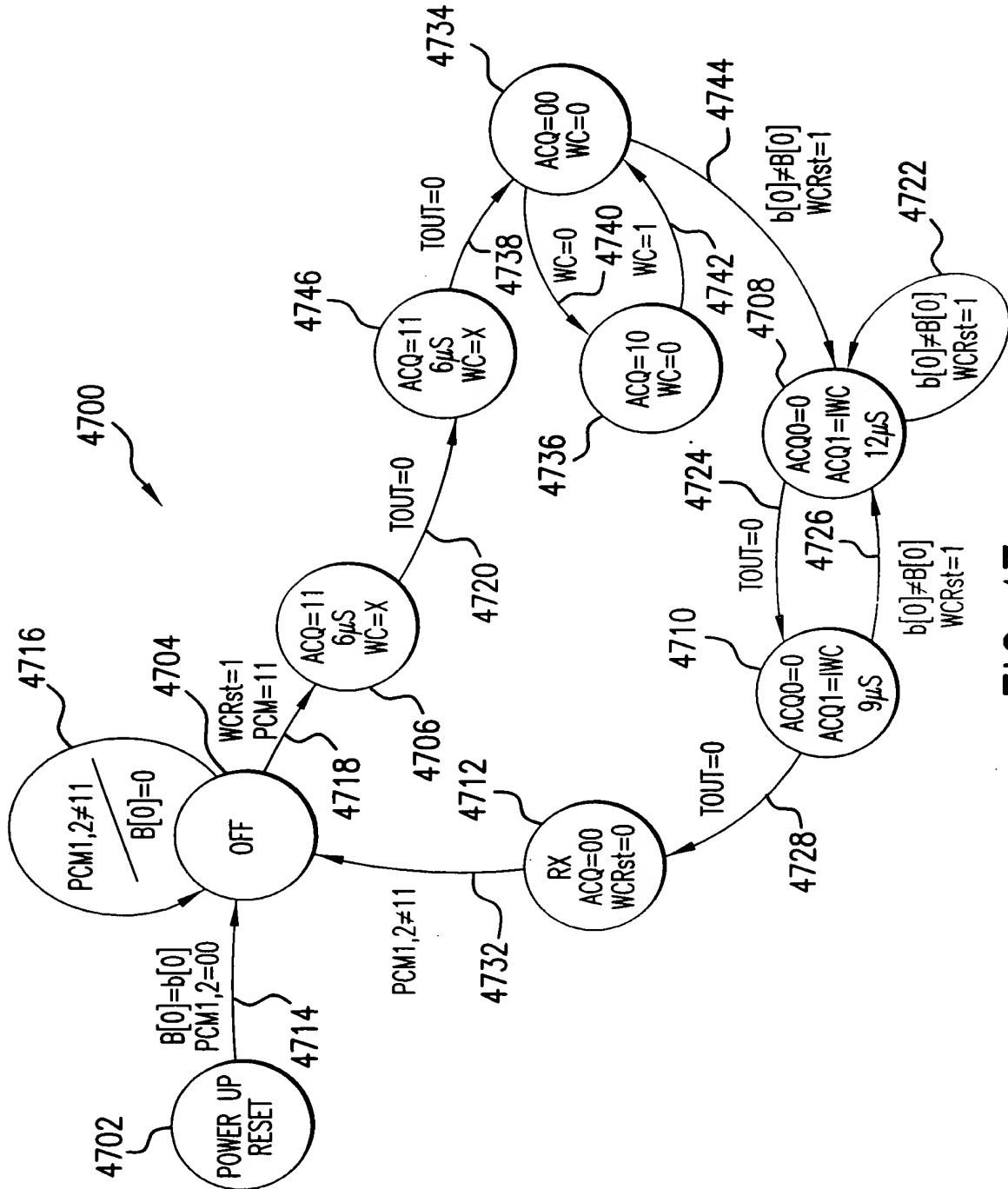


FIG. 47



4800

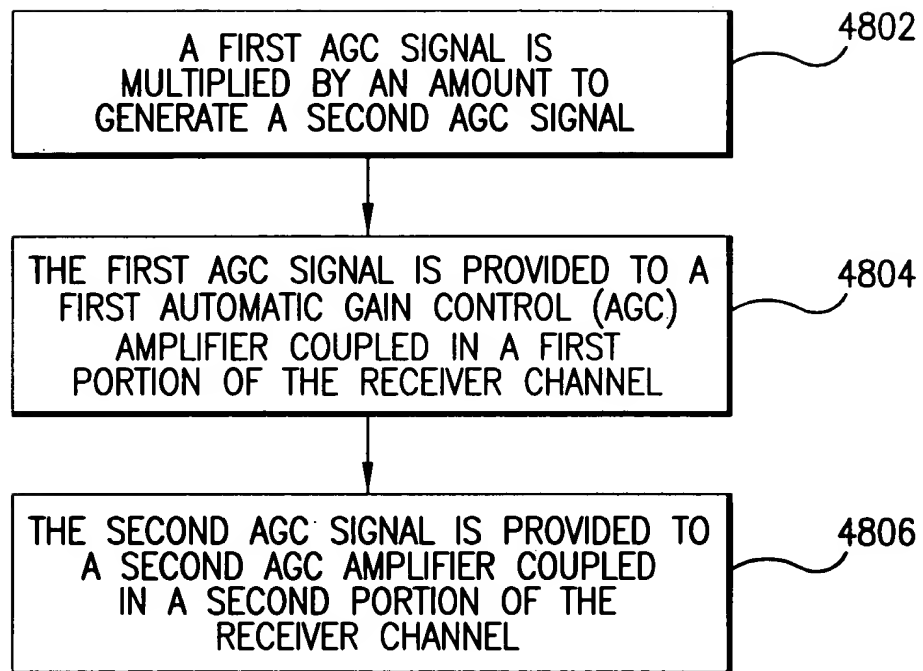


FIG. 48



4800

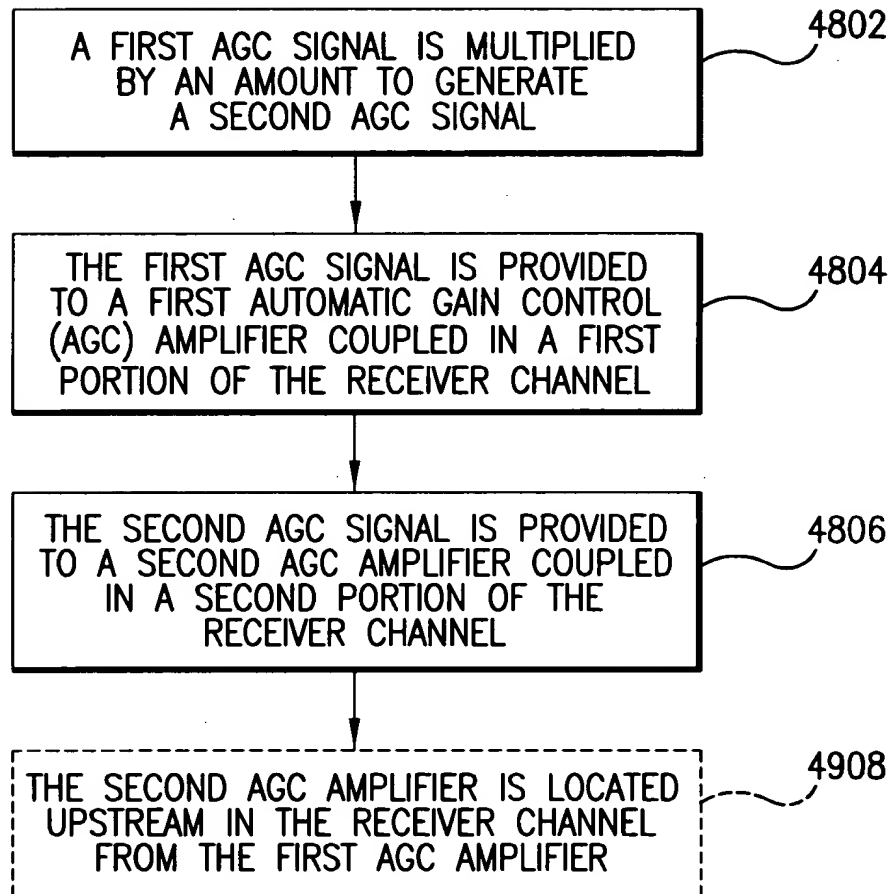


FIG. 49



4800

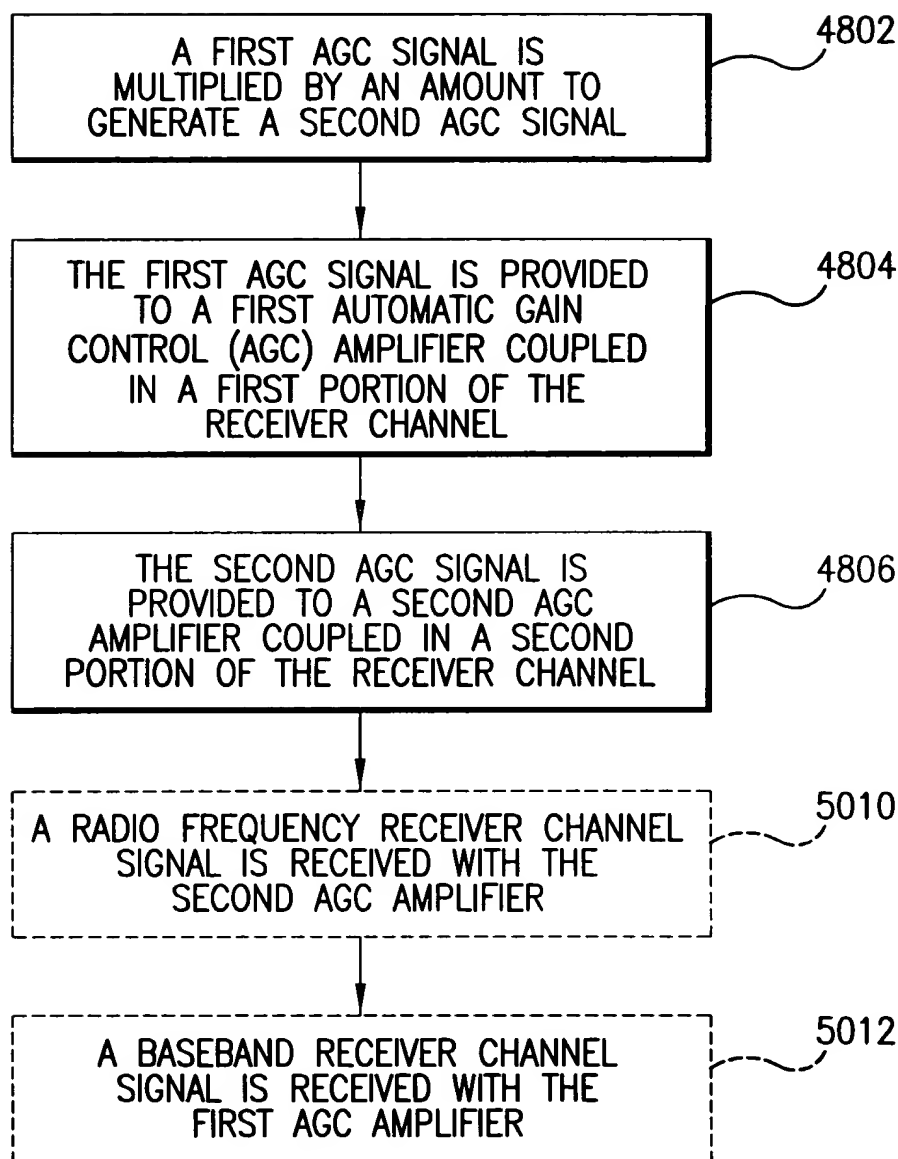


FIG. 50

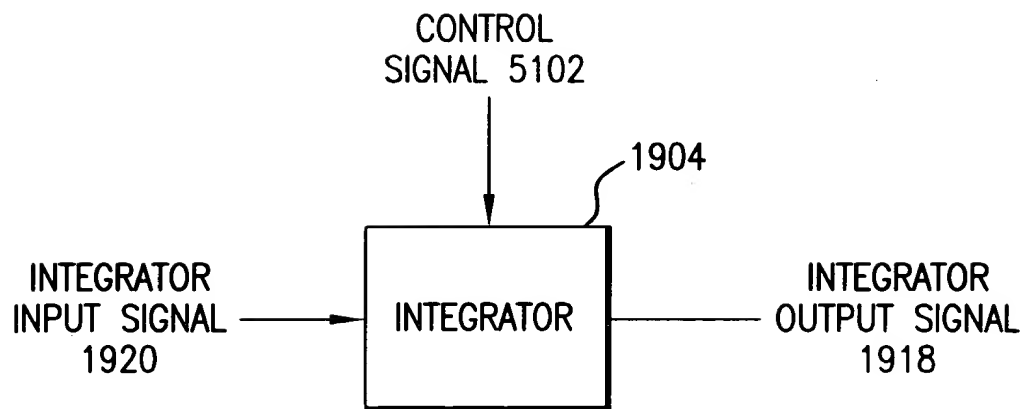


FIG. 51





4800

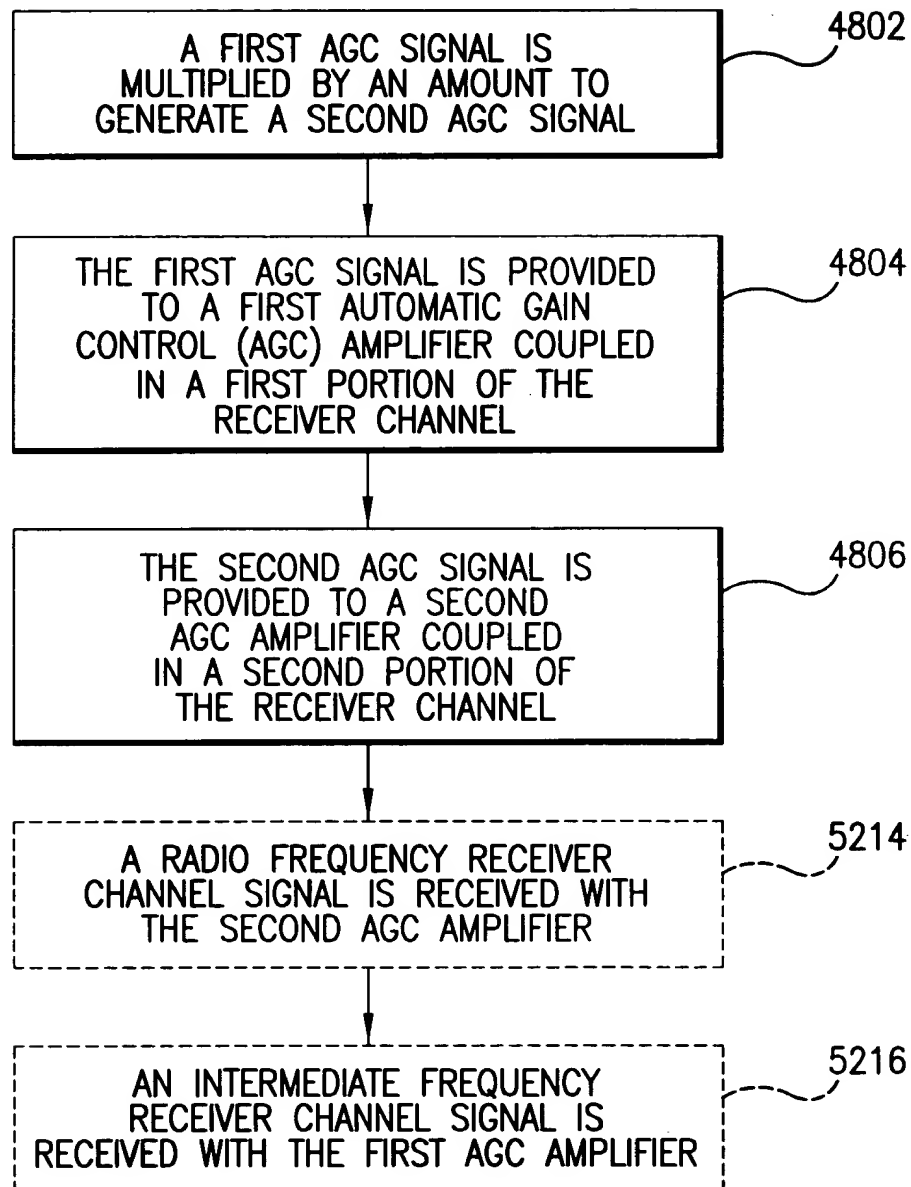


FIG. 52